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## General Scientific

### THE YEAR OF 1914 IN TUBERCULOSIS.

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The past year has not been characterized by any brilliant or revolutionizing progress in the field of tuberculosis. It has been a period of development rather than discovery, the most gratifying progress being in the increasing appreciation of sound underlying principles by the medical profession as a whole.

This does not mean that the year has been an unimportant one. The year has been given over largely to the consideration and assimilation of ideas which, while not new, must be generally accepted before we can make great headway against the disease.

We are growing less reluctant about early diagnosis; less confident about specific treatment; more confirmed in our faith in rest as the cardinal therapeutic agency and less credulous as to the claims of so-called ideal climate.

The one important advance, which has any real element of newness, is the acceptance of the belief that, for the most part, tuberculous infection occurs in childhood.

**Etiology.** Holitscher made inquiries of 3,000 physicians and, as a result, declares that alcoholics are especially prone to acquire tuberculosis.

Ulrici has made an exhaustive study as to the reason for such frequent infection of the apex of the lung and concludes that the anatomy of the chest has nothing to do with this predisposition.

Shaw has pointed out the great frequency of tuberculosis among epileptics, showing that one-third of epileptics die from this disease and that probably 90 per cent. give positive tuberculin reaction. The author suggests that epilepsy may be due to tuberculous infection in childhood.

Wotzilka presents figures to show that the vast majority of the tuberculous are unable to breathe through the nose and suggests nasal obstruction as a causal factor of the disease.

Shennan calls attention to the fact that the majority of deaths from tuberculosis in females occurs between the ages of 15 and 20 and in males between the ages of 20 and 25.

**Infection.**—There is a constantly growing belief that primary tuberculous infection usually takes place in childhood, some writers going so far as to contend that this primary infection, as a rule, occurs under the sixth year of life.

Lanstein regards the first and second years of life as the period of the greatest susceptibility and declares that, at that time, children are nine times as susceptible as adults. According to Pollack, of 285 children from homes in which there is tuberculosis, 275 gave positive reactions; of 57 brought in close contact with consumptives in the third year of life, only seven were infected.

Certain authorities hold that the tubercle bacilli acquired in childhood may remain dormant within the body indefinitely, developing tuberculous disease at any time that the general resistance is lowered and this without additional infection from without. Others hold that this childhood infection produces a hypersensitiveness of the individual, making him much more susceptible to later infection.

Still others hold that the primary childhood infection is more frequently intestinal infection than we have generally assumed and that this accounts for the infrequency of lung involvement in the child. The intestinal infection, however, produces the added susceptibility in later life which results in lung infection.

Petrusky perhaps summarizes the accepted belief, which is constantly growing stronger, when he says that lung tuberculosis in adults is almost always an outgrowth of primary infection occurring in early youth involving the bronchial and mesenteric glands.

The tendency of medical opinion is to swing too far new-ward, and, in view of this interest in child infection, Ravenel sounds a proper warning that there is no evidence that adults are in any sense free from danger of infection and that no acceptable evidence points that way.

The importance of the change in attitude, relative to tuberculous infection is very great. It means that the

adult individual must appreciate that he probably already has acquired his infection and that he must depend for his protection not so much upon dodging the germs as in keeping himself in good physical health. It means that the public warfare against tuberculosis ceases to be an anti-spitting propaganda and must spread out into all of the fields which have to do with safeguarding the public health.

In fact, the majority of medical men are coming to agree with the opinion expressed by Baldwin in 1913: "More protection of children and better hygiene for adults are logically demanded, but beyond this the preaching about the danger of infection to adults in the present state of society are without justification from an experimental standpoint."

The question of bovine infection, which has been more or less under discussion since 1901, now seems definitely settled and practically all writers agree that the cow is a real factor in the spread of tuberculosis. Ravenel contends that bovine infection is more common among young children than among older children, and more common among older children than among adults.

Buiri and Shurman after an examination of over 1,400 patients declared that 8 per cent. of all cases are of bovine origin. One writer contends that bovine bacilli are found in 11 per cent. of the infections of organs and in 29 per cent. of such infections in infants, though almost never found in the sputum.

The determination of the relative frequency of bovine and human type infection will be exceedingly difficult if, as Ravenel says, long residence in the human body so changes the bovine bacillus that it cannot be recognized.

**Diagnosis.**—As previously suggested, the most important progress in the field of tuberculosis has been in the increasing recognition of basic facts relative to the disease. Tuberculosis is a great educational and social problem and yet, as Coutant points out, all education of the laity will be lost until we educate physicians to make early diagnoses.

It must be generally recognized that bacilli are rarely found in the sputum in early cases; that the family history is no more important than such predisposing causes as overwork, dissipation, financial reverses, etc.

Gibson declares that complete clinical histories, the tuberculin test and the x-ray will give a diagnosis in from 75 to 90 per cent. of all infection before the lungs are involved.

Lavinson tells of 66 sanatorium patients, but 12 of whom were regarded as tuberculous when originally examined by their physicians. Although all of the others had definite symptoms of the disease, only 14 per cent. were given a real physical examination. Lavinson is of the opinion that but one in seventy physicians thoroughly examines patients having suggestive symptoms.

Attention has been called during the year to the fact that few if any of our medical schools teach the early diagnosis of tuberculosis.

It has been our tendency to assume that children having enlarged lymph nodes with tuberculin reaction are afflicted with glandular infection. Gade, however, examined 1,150 such children, with the aid of the x-ray, and found that in all but 79, infection had extended to the lungs.

The keynote of most of the literature on diagnosis is that the symptom group which we once accepted as indicating early tuberculosis is now interpreted as meaning advanced tuberculosis;—that early diagnosis will rarely be reached by the physician who relies

alone upon physical examination and the findings of the sputum.

The frequency with which tuberculosis has been diagnosed as typhoid fever is deplorable and certain writers of the year declare that typhoid without rose spots must be looked upon as particularly suspicious.

Considerable attention has been devoted to the pain common to tuberculosis which has frequently been misinterpreted. Stern lays stress upon pain in the shoulder and in the abdomen due to secondary pleurisy leading to the diagnosis of rheumatism of the shoulder on the one hand and of appendicitis, gastric ulcer, disease of the pancreas and gall stone on the other.

Gerhart tells of seven cases diagnosed and operated as appendicitis and of pain in the shoulder regarded as joint involvement but all actually due to pleurisy.

Nohl reports eight cases diagnosed as rheumatism which proved to be tuberculosis and quotes Poncet as urging that in every case, before the diagnosis of chronic rheumatism is made, tuberculosis must be excluded. He adds that any case of rheumatism of slow course and with tendency to stiff joints which does not respond to salicylates, and especially when the general health is impaired, must be looked upon with extreme suspicion.

Gross reports several cases operated for gall stones, pancreatic disease and gastric ulcer in which enlarged tuberculous nodes were found to be the cause of the deceptive symptoms.

The nervous manifestations of early tuberculosis have received considerable attention. It has long been recognized by students of tuberculous disease that patients are usually more or less neurasthenic and depressed and, during the past year, evidence has been set forth indicating that many of those cases diagnosed as neurasthenia (which is no diagnosis at all), will show active tuberculous infection on more careful examination.

Unquestionably a large number of cases diagnosed as Graves' disease are in reality tuberculosis. Saathoff and Mobies declared that the symptom complex of Graves' disease accompanied by fever should be looked upon as a tubercular condition.

Cabot, Emerson, Pottenger and others call attention to the fact that diarrhea during tuberculosis is too often diagnosed as disease of the intestine. Such diagnosis is seldom warranted except when there is lung disease, and active diarrhea during lung disease is due to tuberculosis of the bowel in but 50 per cent. of cases. Tubercle bacilli in the stools may be due to swallowing sputum and may have nothing to do with the intestine. Further, diarrhea occurs in only one-third of the cases of intestinal tuberculosis.

Several special signs of alleged diagnostic value have been discussed. Muscle spasm and degeneration are, of course, established so that, to the expert, inspection and palpation are often of more value than percussion and auscultation.

Hawes calls attention to the errors in physical examination due to muscle sounds in muscular, nervous patients and due to joint sounds which are mistaken for rales.

Small varicose veins at the nape of the neck, known as Lombardi's sign, constitute a diagnostic point of value in children from five to ten years of age.

Fishberg calls attention to the fact that in most cases of tuberculosis the heart is dislocated toward the side affected, this becoming more constant as the disease advances, while Burns reports having found organic

heart disease in 17½ per cent. of all tuberculous persons.

**Laboratory Diagnosis.**—In the field of laboratory diagnosis, no really important progress has been made. The diazo reaction as a means of prognosis has been improved upon in the urochromogen test of Wiesz and to this Metzger and Watson attach considerable importance. Persistent urochromogen reaction gives a bad prognosis while the disappearance after the beginning of proper treatment is said to give good promise.

The significance of albumin in the sputum is the subject for radical difference of opinion. Benzler, Holm, Himmelberger and others declare the absence of albumin in the sputum means absolutely no tuberculosis. They further agree that decrease in albumin means improvement of the patient. Acs-Nagy, on the other hand, declares the test useless.

**Tuberculin Diagnosis.**—Opposition or reluctance to employ tuberculin in diagnosis has steadily passed away and it may now be stated that no one is making any considerable number of early diagnoses without it.

The conjunctival (Calmette) test has been abandoned by most diagnosticians as unsatisfactory and distinctly unsafe. In spite of this unanimity of opinion, Gertman uses and defends the test as does Vaughan in this country.

The Moro test is not as generally used as formerly and its employment is confined to very young children. In most cases where the Moro was once used, the Von Pirquet scarification test now has preference.

In infants, the Von Pirquet test may be regarded as diagnostic but it has little or no significance after the second year of life.

The subcutaneous test with special attention directed to the general reaction is accepted as the most reliable diagnostic use of tuberculin. Its satisfactory employment, however, necessitates close observation for from twenty-four to seventy-two hours which is impracticable outside of an institution. For this reason preference is being given by many diagnosticians to the so-called "intracutaneous" test, the injection of one milligram or more of old tuberculin as closely under the skin as is possible. This gives a very decided local reaction which is frequently accompanied by focal and general reaction in case the dosage is sufficient.

Egert calls attention to a "tuberculin contrast phenomenon" which he regards as of prognostic value among young children. He points out that during the active tuberculosis in the young the Von Pirquet reaction is marked, but there is very little redness at the point of subcutaneous injection. As the child recovers this is reversed. The Von Pirquet reduces and the redness at the point of injection increases.

**Treatment.**—In reviewing the literature, it is very difficult to determine the consensus of opinion in regard to the value of tuberculin therapeutically. Results in sanatoria are not significant one way or the other, since, regardless of the opinion of the observer, it is almost impossible to decide how much of the benefit is due to institutional care. Dispensary results mean more since the home lives of patients, especially of the dispensary class, cannot be materially regulated and the benefit, if any, must be due largely to the specific treatment.

It is significant that dispensary workers continue to attach importance to tuberculin treatment and it is fair to assume that the disappointment expressed by many general practitioners is due to their failure to appreciate the cardinal principles of tuberculin therapy. It is safe to say that the more familiar the physician becomes

with the use of tuberculin, the more satisfactory his results will be.

However, at best, specific therapy cannot be said to have reached a point where it alone may be relied upon for cure. Honest enthusiasts may properly hold that out-of-door treatment plus tuberculin gives better results than out-of-door treatment alone. That is as far as they can go.

There is still some sentiment against tuberculin treatment on account of its danger; but the saner view seems to be that while tuberculin is safe for use in expert hands, it is not a remedy for common employment by the general practitioner.

Treatment with graduated exercise (autoinoculation by work) originally suggested by Paterson, has been employed somewhat in the United States. Exercise, like tuberculin, may be an agency of great good or of great harm, but its employment is so hazardous that it cannot be used successfully outside of institutions. Unless rigidly supervised, exercise should have no part in the treatment of tuberculosis and, even in institutions, the slightest disturbance of pulse or temperature occasioned by it should mean resumption of absolute rest. Like tuberculin, its use must be strictly individualized and no general rules can guide its employment.

Specific treatment with drugs has ever been a barren and disappointing field and never more so than in the past year.

More converts are being made each year to the employment of artificial pneumothorax and several prominent men who opposed it a year ago are using it now. Even such an enthusiast as Landoit, however, urges caution, declaring that it should never be used in the milder cases, as there is a very definite element of danger in the operation itself.

In progressive, one-sided cases, where the outlook is not otherwise encouraging, there is certainly no objection to the procedure and Landoit declares that it is followed by temporary improvement in 65 per cent. of cases.

On the whole the progress in the treatment of tuberculosis during the year has amounted to little. Complete rest out-of-doors during any activity of the disease is established beyond question and it is becoming recognized that sanatorium care, if for no other purpose than that of education, is almost indispensable.

While climate is a factor in cure, it is becoming recognized as no longer one of the important factors, although it will take a great many years to educate the medical profession and the people as to the part which climate can actually play to bring about cure.

Briefly stated the soundest treatment of early tuberculosis at the present time consists of comparatively brief training in a sanatorium with fresh air, rest and rigid discipline supplemented by careful methods of life at home and in many cases the judicious use of tuberculin.

One of the interesting incidents of the year foreseen by those who have seriously regarded the tuberculosis problem, was the final and official bursting of the ridiculous Friedman fiasco. It is hoped that this additional experience may have some effect in decreasing the gullibility of the American people and of the American medical profession and their susceptibility to the wiles of foreign frauds.

#### Stomatitis.

Phenolis .....gtt. viij  
Sodii Bicarbonatis.....3ij  
Glycerini .....f. 3iv  
Aque .....ad. f. 3iv

M. Sig.: Use as a mouth wash.



## STERILIZATION OF THE UNFIT BY VASECTOMY.\*

From the Medico-Surgical Standpoint.

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"There is not the slightest doubt that we are in everything essential the creatures of our parents and of our ancestors, that it is, on the whole, predestined by the nature of the germs from the combination of which we emanate *what we are and what we are to be*.

"By no means everything that is given us is good! The parental germs themselves may, to begin with, be possessed of inherited deficiencies, or they may have suffered by injuries which affected the parental body, or they may not have been perfect on account of the (a) immature or too advanced age of the parents."

Thus writes Professor M. Gruber (*Marriage and Disease*, 1909, p. 15-16), and he further emphasizes the fact (b) the too rapid child-bearing; (c) too many children in a poor family to be properly nourished on the small earnings of a laboring man; (d) that many chronic diseases—of either parent—such as lead-poisoning, syphilis, tuberculosis, mental and nervous diseases, alcoholism and morphinism are productive in the descendants of feeble vitality, diminished resistibility, etc.; (e) certain morbid predispositions are inherited from generation to generation, and are doubtless based upon some specific defect in the *embryonic* elements; (f) that, while the intermarriage of the closely related of healthy stock will produce the best of progeny the disadvantage is that near relations possess the same inherited predispositions, and that a combination of these injurious influences may attack the embryo.

Gruber therefore "lays down something like the following as a rational guide:

"People afflicted with serious maladies, malformations, degenerates such as idiots, imbeciles, lunatics, epileptics, drunkards, habitual criminals, and chronic sufferers, such as tuberculous persons and syphilis in the secondary stages, should be absolutely excluded from procreation. . . . Only such persons should beget children as are perfectly healthy, strong, and well nourished."—1 c., p. 21.

In the same volume (p. 444) Professor Eberstadt aptly writes that:

"As to the politico-social view (of sanitary marriage) its object is to awaken and strengthen the sense of solidarity and responsibility in every one of us. . . . The ultimate goal of every well-understood politico-social endeavor must be to obtain the best possible conditions for every single person, no matter whether it relates to the community as a whole or to its individual constituents.

"It is principally from this latter standpoint that the question has arisen which has so often engaged the attention of medical men as well as of the lay public—namely, whether on legal and politico-social grounds the contraction of marriage ought not to be made dependent upon the presentation of proofs that the bodily health is good, or that there is at least an absence of disease which may be the source of danger to the other married partner or to the eventual children.

"The exposition of children was the prevailing and stubborn vice of antiquity. Under Roman law protection was due to every phase of existence; and reason must applaud the humanity of Paulus for imputing the crime of murder to the father who strangles, or starves, or abandons his new-born infant, or exposes him in a public place to find the mercy which he himself had denied."—*Gibbon's Rome*, ch. 44.

While to-day we have so far enforced this law by providing suitable hospitals, asylums, and educational institutions for the care of the physically and mentally below par, I fear it will be some decades if not cen-

turies before we accept the Spartan idea that children do not belong to the individual parents, but to the state. After the performance of the first maternal duties, the youth were educated at the expense of the public, and every citizen had as much authority over his neighbors' children as over his own.—(*Tytler's Hist.*, Book 3, ch. 9.)

As a result of this attitude toward weak and defective children and the decadency of hanging as a fashionable, holiday entertainment, the unrestricted, unlimited procreation of the *unfit* classes has gone merrily on, despite the wail of the doctor, the howl of the taxpayer, the noise of the statistician, the longing of the mateless and the screeching of the feminists.

If the state has the right and deems it wise for the welfare of the community as a whole, to extend existing laws defining who shall and who shall not marry, among our free, self-supporting citizens, proscribing those infected (primarily or hereditarily) with communicable diseases, there can be but little doubt as to its right of going a step further by enforcing laws, whereby incorrigible and diseased criminals, mental defectives, etc., may be rendered powerless to multiply their kind, and limit the burden of their care to the smallest possible number.

This practical desideratum can best and most effectively be attained by the enforcement of laws in both these directions—the control of marriage among the unfit, be they of the bond or freedman classes.

**Punitive Measures.**—When one examines, even in a casual way, the 900 pages of the New York Charities Directory, and notes that in spite of the thousand and one state and private institutions—educational, reformatory, corrective, detentive, reclamationary, segregative—the number of the criminal and defective classes is increasing wholly out of proportion to the general and normal increase in the population; and that at a cost of many, many millions of dollars annually, one is forced to the consideration of the question: "Is there no reasonable, rational, simple, safe and sane way whereby without infringing the constitutional rights of the submerged tenth they may be prevented from multiplying their kind, and the burden on society be minimized?" The results secured by the above named measures, according to the records of our courts and the most optimistic statisticians fall far below the good aimed at; and the burdened taxpayer, the most devoted charity worker, the greatest and most enthusiastic of reformers, etc., realize that we fail to get at the root of the evil, by eliminating "at the source"—procreation.

In a paper read before the New Jersey State Medical Society, 1909, Chandler said that students in sociology had called the attention to the fact that the birth-rate of the criminal and defective classes was increasing much more than that of the intelligent and law-abiding citizens. This was probably because these defectives had no sense of responsibility, and sought only the gratification of their animal natures. He referred to the (in)famous Jukes family of criminals, vagabonds and paupers, to support the view that crime was hereditary. Society had sought to protect itself against the increasing number of criminals and defectives by passing *punitive* laws and by maintaining institutions for such persons. This had entailed a considerable expense on the community and had not been particularly successful. Some states had forbidden the marriage of persons who were epileptic, imbecile, feeble-minded, or afflicted with insanity; but, unfortunately, the race could be propagated *without* marriage. Segregation

\*Read, in conjunction with a paper on "Sterilization Laws," by Charles A. Boston, Esq., at the second annual meeting of the American Association of Medical Jurisprudence, New York.

Achilles Rose suggests as a title "Aphoria caused by Operative Spermatoplasia; or Dockstomic Aphoria—sterility in consequence of cutting the spermatodokos—the vas deferens."



or colonization was costly, and deprived many otherwise useful citizens of their liberty. Castration unsexed the individual; and, while advisable as an additional punishment for a limited number of criminals, was objectionable as a general measure. *Vasectomy*, however, was simple, safe and thoroughly efficient. It would prevent propagation without unsexing the individual (*Jour. Am. Med. Assn.*, 1909, liii, 737). Dr. Harry C. Sharp, of Indianapolis, for a long time chief physician of the Indiana State Reformatory, has done many hundreds of these operations.

In 1901 Sharp said:

"Formerly I used the operation suggested by Dr. Oschner. . . . Latterly I have been following the *English method*, which selects the scrotal region as the site of operation."—*Trans. Miss. Valley Med. Assn.*, 1901, iii, 306.

Sharp's Operation.—(*Jour. Am. Med. Assn.*, 1909, liii, 1899).

"Since October, 1899, I have been performing an operation known as vasectomy, which consists of ligating and resecting a small portion of the vas deferens. . . .

"After cleansing the scrotum with soap and water I bathe the part in alcohol, then grasp the spermatic cord between the thumb and index finger of the left hand, detect the vas, hold it firmly and fix it with a pair of bullet forceps, then cut down on it, draw it through the scrotal wound by means of a tenaculum hook, strip it of all the membranes and the accompanying artery, ligate above and sever, cutting away any portion of the vas that may have been damaged in the manipulation. This is done in order that the *end next to the testicle* may not become closed. It is very important that it shall remain open, in order that the secretion of the testicle may be emptied around the vessels of the pampiniform plexus and there absorbed, for it is through this process that the economy receives the tonic effect of the secretion; also where the end is closed there is likely to be cystic degeneration. The action of the muscles closes the skin wound and no stitch, collodion or adhesive plaster is needed. The patient returns to his work immediately and suffers but little inconvenience. . . .

"This operation is very simple and easy to perform. I do it without administering an anesthetic either general or local. It requires about three minutes to perform the operation and the subject returns to his work immediately, suffering no inconvenience, and is in no way hampered in his pursuit of life, liberty (?) and happiness, but is effectively sterilized. I have been doing this operation over nine years. I have had 456 cases that have afforded splendid opportunity for post-operative observation and I have never seen any unfavorable symptoms. There is no atrophy of the testicles, no cystic degeneration, no disturbed mental or nervous condition following, but, on the contrary, the patient becomes of a more sunny disposition, brighter of intellect, ceases excessive masturbation, and *advises his fellows to submit to the operation for their own good*. And *this is the point* in which this method of preventing procreation is so infinitely superior to all others proposed—that it is indorsed by the persons subjected to it. All the other methods proposed place restrictions and, therefore, punishment on the subject; this method absolutely does not. There is no expense to the state, no sorrow or shame to the friends of the individual, as there is bound to be in the carrying out of the segregation idea."—*Loc. cit.*

In answer to a query the *Journal A. M. A.*, 1911, lvii, 1152, said:

"The *physiologic* effect of bilateral excision of a portion of the vas deferens, commonly called vasectomy, was studied on animals a century ago by Sir Astley Cooper, and has been investigated by many others since. The unanimous report is that no (detrimental) effect whatever can be detected, except the imprisonment of the spermatozoa and consequent sterility. Both functions of the testicle—the so-called internal secretion necessary to adult masculinity, and the production of spermatozoa—continue unimpaired indefinitely. In a human subject normal active spermatozoa were found in the testis seventeen years after occlusion of the vas. Sexual power and desire continued unaffected, as they do after bilateral occlusion of the vasa by gonococcus epididymitis, and in cases of congenital absence of the vasa.

"In the human subject, excision of the diseased vas has long been a standard measure; bilateral excision of a piece of the normal duct was introduced by Lennander, in 1894, as a substitute for castration as a means of relieving the ills consecutive to prostatic hypertrophy; and for several years after had considerable vogue. . . .

"The operation is surgically and physiologically harmless."

The same publication, 1909, lii, 1348, said:

"The testis furnishes two products, spermatozoa and an internal secretion. Neither of these is arrested by occluding the seminal duct, for Posner years ago reported that by puncture of the testis he had withdrawn living spermatozoa ten to seventeen years after occlusion of the epididymis by gonorrheal invasion. Belfield on making an anastomosis of the epididymis and vas for the cure of sterility, found spermatozoa present fourteen years after occlusion of the epididymis had occurred. That vasectomy itself is equally harmless to the spermatogenic function is shown in a case in which he reunited the vasa three years after they had been divided, the semen subsequently containing normal spermatozoa. Moreover, absence of spermatogenic function of the testis does not include absence of sexual desire or power; this is amply proved by cases of retained testes, the subjects being sexually vigorous, though the testes produce no spermatozoa. It is also shown by the sexual vigor of those whose spermatogenic function has been arrested by exposure of the testes to the x-ray. Evidently it is the internal, not the external (spermatic) secretion of the testis which confers and maintains sexuality; evidently the two functions are independent, and evidently neither is arrested by vasectomy."

Belfield maintains that:

"Vasectomy sterilizes without the slightest impairment of sexual power or pleasure. It merely closes the minute canals through which the spermatozoa must pass from the testes to the organs which secrete the bulk of the seminal fluid and deposits it in the genital canal of the female. The absence of spermatozoa from this fluid does not impair the mechanism of erection and ejaculation. This is abundantly proved by the robust health of thousands of men who have been unwittingly sterilized through bilateral epididymitis, and who never suspect that their procreative functions are not perfectly normal until their marriages prove barren; they are potent, but not fertile. That vasectomy itself is equally harmless to sexuality is shown by the experience of those on whom it has been performed."

Among those, within Belfield's personal knowledge, are married men who chose this means, rather than criminal abortion, to prevent the transmission to offspring of their own hereditary taints, such as insanity and syphilis, Vasectomy, says Belfield (*Jour. Amer. Med. Assn.*, 1909, lii, 1211) is an office operation:

"It can be performed in a few minutes under cocaine anesthesia, through a skin cut a half inch long; it entails no wound infection, no confinement to bed; it is *less serious* than the extraction of a tooth."

Is it a fact beyond dispute that there have been no deleterious after effects from Vasectomy? In answering a correspondent the *Journal of the A. M. A.*, 1909, lii, 1348, says:

"While vasectomy for the sterilization of those judicially declared unfit for citizenship is a recent practice, yet vasectomy for other purposes—the relief of prostatic and vesicular diseases, and of recurrent epididymitis—has long been a standard surgical procedure; so has excision of the tuberculous epididymis and vas. There is therefore a large surgical experience as to the effects of vasectomy on sexuality. This experience affirms that neither sexual desire nor sexual power is impaired by vasectomy. For example, Oschner stated before the Chicago Medical Society, April 7, 1909, that men on whom he had performed vasectomy were sexually normal ten years later. Others have made similar observations and say that they have not seen impairment of sexuality follow the operation."

Sharp found in case of the male:

"There is no diminution of sexual power or pleasure. The discharge at orgasm is but slightly decreased. . . . The desire for the opposite sex is in no way diminished; his mind is strengthened and his nervous system benefited from the re-absorption of sperm. It has a decided effect on the center of self-restraint, besides improving the physical condition, as the masturbator refrains from excessive indulgence in this practice. Almost wholly as the result of increased will-power, the rapist or criminal will be aided in resisting his pernicious impulses. Thus we have a means of preventing procreation of the unfit, at the same time improving the condition of the unfortunate individual."—*Sharp, l. c.*, 1900.

The *immediate effect* of thus severing the vas deferens is, of course, to divert the sperm and testicular secretion from reaching the urethra, and sidetracking it into the loose cellular tissue of the scrotum from

which it is absorbed into the circulation. After the act (coitus) such an actor may truthfully exclaim "that somebody hath touched me, virtue has (not) gone out of me;" a conservation of energy most likely to be appreciated by worshippers at the shrine of Venus, as adding materially to their virility, and the absence of the fear of "getting others into trouble."

If this little operation becomes fashionable among a certain class of irresponsibles we may have to return to the "purity padlock" of the middle ages, in order to protect our anti-suffragette females from this new order of pseudo-knights of the garter.

Operation on Females.—Writing on this phase of the subject, Sharp says (loc. cit., 1900):

"The operation in the female is more difficult, but, if skilfully done, no more hazardous. The oviduct is reached through a median incision, the tube ligated near the uterus and severed beyond the ligature.

"There are over 300 girls in the institution for the feeble minded in Indiana who, if treated in this manner, would be able to leave the institution and be self-supporting, as the only reason for detention is for the purpose of segregation, as they have not the character to resist the importunities of unprincipled men when thrown on their own resources. The result is that when released from the institution they shortly return in a state of pregnancy, or marry someone unable and unfit to rear a family. In either event there is an addition to the dependent class. With the oviduct severed this danger is absolutely obviated."

In closing we cannot do better than to repeat the words of A. J. Oschner (*Trans. Miss. Val. Med. Assn.*, 1901, iii, 308):

"It seems to me that when we have a means which is perfectly safe, which is unaccompanied with pain, which leaves no deformity, which leaves the patient precisely as good as before, with the exception of disabling him from inflicting his progeny on the community, the medical profession should quietly develop this subject, and I believe we could do more in this direction than we could in taking care of those who are afflicted in this way. I believe the reason why the proportion of criminals and paupers is increasing so rapidly in this country is because they are fed so well. They do not die the way they do in other countries, where there is not so much food. If we feed them well they continue to increase more rapidly unless we stop them from procreating."

70 E. 66th Street.

## THE IDENTIFICATION SYSTEM OF THE U. S. ARMY.\*

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Until 1890 the army was greatly bothered by deserters, who after a period, fraudulently re-enlisted to give more trouble. As a rule, these men are undesirable because they are essentially unstable—not criminals by any means, but more allied to vagabonds and ne'er-do-wells, and many of them, perhaps the majority, cannot be made useful either in the army or out of it. Formerly we thought that they were normal men, but a critical examination of them some years ago, by the writer, showed that they had many more of the stigmata of degeneration than the average man, and though able to pass the physical examination on enlistment, were generally decidedly abnormal or perhaps it might be best to say that most of them are borderland types of psychopathic constitution.

These are the exceptional men. It is not true that the British and American armies, being on a volunteer basis, receive only the failures from civil life. The vast majority of recruits are mere boys who have not yet found themselves but are decidedly above the average of their social class, both mentally and physically.

\*Read at a meeting of the Society of Medical Jurisprudence, November, 1914.

Violations of law among them are exceedingly few—a thief is promptly weeded out. The popular idea that soldiers and sailors are given to strong drink was once true, but it was at a time when a gentleman lost caste if he went to bed sober. But all that has changed now, and I know of no class in civil life which can present a record so free of serious faults of this kind. Chronic alcoholism indeed has long been a cause for separation from the service and it is largely connected with mental or nervous abnormalities. Selection among officers is still more rigid and as a result their records show fewer cases of crime than even among the clergy. Alcoholism is very rare as there are few unstables.

Criminals cannot enlist, as a rule, because they are physically defective. Some years ago I examined about 200 or 300 young criminals in an Illinois institution, and found that nearly all of them had a military disability such as hernia, evident defects of ears, eyes and teeth, underdevelopment, misshapen bones, etc. About a dozen or two might have been slipped through by a careless recruiting officer or in time of war when the standard is lowered, and only two or three were found free of all discoverable infirmities or defects. Still, the man who has committed a single crime of passion perhaps or even the professional crook will occasionally pass the examination to hide from the police. But these are very few. If an ex-soldier has "excellent" character on his discharge, employers in civil life can rest assured that he is a high grade man, far above the average of humanity and they will make no mistake in giving him employment.

It is evident, nevertheless, that boys have not yet been subjected to the nervous strains of the struggle for existence, and no one can foretell which of them are too unstable for any strains at all and which ones are so poorly constructed that they will break down under severe discipline. Among the class who are unfortunate enough to have lacked parental help to guide them to proper ways of making a living, there must be a certain percentage who are nervously weak as among physically perfect workmen or laborers of equal ages. Thus it happens that one-fifth of the 1,069 discharges for disability in 1912 were for mental defect or disease, as described by Dr. Edgar King of the Army Medical Corps (Bulletin No. 5, Surgeon General's office, 1914), and about 50 per cent. of them were cases of dementia precox. He estimates that including cases of insanity otherwise disposed of, 60 per cent. of insane soldiers are of this class—about the percentage among civilian insane of equal ages.

The hysterics and neurasthenias are not included in the above 20 per cent., but minor grades of these defects occur rather frequently among deserters I have personally examined. Morons and high grade imbeciles very occasionally enlist, but their mental condition is soon discovered and they are discharged. These men as well as the cases of incipient insanity (mostly dementia precox) not infrequently commit other offenses or crimes. In the five years ending 1913, 35 general prisoners were sent to the asylum. Most of them had dementia precox and the rest were evidently nervous or mental defectives, few of whom could be detected on enlistment. All this speaks very well for the care taken in the original examinations, for it is quite evident that only a small percentage of the 95 or 100 thousand men are nervous defectives.

Now although such a very small percentage of the recruits turn out badly, they have given an enormous amount of trouble and every conceivable suggestion has been taken up with a view of keeping these few out



of the service, or of preventing desertion should they pass the rigid examinations. The lot of the professional soldier was far from enviable up to the middle of the last century in all civilized countries. At that time a great awakening of sanitation, prison reform and what not led to army improvements which have now raised the material and moral sides of the soldier's life to a higher level than that in which many of them had been living. As far as this is concerned, it undoubtedly was once a cause of desertion, but is so no longer.

Unquestionably the further improvements in the condition of the soldier's life, beginning about 1889, has some effect in reducing the desertion rate, which from that time fluctuated around 4 per cent. for many years. That seemed to be the near minimum, and possibly that percentage of men will desert no matter what is done for them. In civil life they drift from one job to another through sheer restlessness and inability to work steadily at anything. In 1910 nearly half of the deserters who for one reason or another were restored to duty after apprehension or surrender, deserted again or were discharged without honor or dishonorably. As these were the best of those who came under military control, we can fairly assume that those who remained in desertion were far more unstable and would quit under the best conditions—the unfit. It is quite likely that if the chances of escape and avoiding detection and apprehension were as good in foreign armies as in America, they would have a far higher percentage of desertions than we do, for the surroundings of the foreign soldier are far more disagreeable than in our army. Indeed our desertions are exceedingly few in places where it is as difficult to escape and avoid apprehension as in Europe.

There is reason to believe that after 1889 the possibility or probability of being caught if he re-enlisted had a deterrent effect upon the least unstable. At about that time the late General Charles R. Greenleaf, then a major in the Medical Department, conceived the idea of making a record of missing teeth, permanent scars, tattooing or other markings, which, together with the height, age, color of eyes, hair, etc., would lead to the identification of a deserter should he attempt to re-enlist under a new name. The state of public opinion would not permit of the adoption of the Bertillon system, because it implied a relationship to criminality, and Greenleaf's system was tried with very great success. A simple classification was adopted based on height and color of eyes. It would generally lead a repeater's card to the same compartment as the original. It was designed merely to get the men who tried to re-enter the service and not to apprehend those who remained in desertion.

In Europe, war increases desertions we are told, but our Spanish War reduced them to 1.57 per cent. When the war was over the rate at once rose to the normal and then increased, so that it became necessary to take new steps to prevent it. I do not know the reasons for this increase, which culminated in a rate of about 7.43 per cent. in 1906. Perhaps in these years of prosperity, when labor was in demand, some men were induced to commit the crime through the temptation of civil employment at higher wages. The great number who remained in desertion made it imperative to apprehend them as a deterrent. It was also apparent that some repeaters were escaping detection, tattooing and scars being changed and marks removed for this purpose.

As a result of the deliberations of a board of officers in 1906, a successful attempt was made in this direction.

Something invariable was demanded, for even height is not constant, and the inaccuracy of the measures employed, together with unavoidable carelessness, would often cause great discrepancies in the different reports of the same man. Even the iris changes color with time and with changes in the light, and it is exceedingly difficult to describe an eye unless we use the elaborate classification of Bertillon and have colored models for comparison.

The new system is merely the old with an addition of photographs and of finger prints which never change throughout life and are never alike in two persons.

Each finger and thumb is first rolled over the paper, then the four fingers of each hand are pressed down simultaneously, and finally a print is taken of the right index finger immediately after signature of the soldier. These are filed away according to a system which was devised in India and adopted by the English, as described in the book by E. R. Henry—the basis of the classification being the division of all ridges into loops and whirls,—arches and composites being subsidiary.

The finger must be rolled to bring out the pattern which extends to the sides of the finger. Then the plain or pressed impression of the fingers is taken to be sure that each of the rolled impressions is in the right compartment, since the sequence of the forms is used in classification. Finally an impression of the index finger is taken after the paper is signed. This is a further check against the mistake of signing the wrong cards.

The following table shows the number of deserters, and others who fraudulently enlisted, and were detected by this system. It is evidently deterring attempts to re-enlist fraudulently, and is saving much trouble.

1907.....	171
1908.....	335
1909.....	340
1910.....	220
1911.....	326
1912.....	337
1913.....	256

The Adj. General says on p. 264 of his 1913 report: "The finger print records and photographs have not only led to the apprehensions of criminals who have enlisted in the army for the purpose of escaping detection, but have doubtless deterred criminals from attempting to enter the army for that purpose." The photographs are of course the main reliance of the police in detection. They are furnished with half tone copies, and other information upon which a search is made in places where the man might go, particularly the neighborhood of his home.

In 1913, 4,451 men deserted, but almost exactly half that number, 2,227, were returned to military control, 36.5 per cent. by surrender and 63.5 per cent. apprehended by police, detectives, civilian agencies and military and naval authorities. In most of the arrests, the photographs are said to have played the most important role, but no figures are available on that point. In 1907 before the photographs were well distributed, there were 4,522 desertions and only 1,445 returned to military control, so that it is safe to say that the photographs have increased the apprehensions by about 50 per cent. Wherever possible the Cooper Hewitt light is being used because the violet and ultra violet rays bring out skin blotches and specks very distinctly and aid in detection.

The finger prints are used to establish identity after arrest. In every instance in which the impressions sent in have been found to correspond with those on file, the man has been found to be the one whose hands made



both sets of impressions. There is no way of determining whether some have escaped detection, but from the system of classification it is not likely there are many, although there are now 300,000 records on file. There is a story of two cards having impressions so nearly alike as to have raised serious doubts as to the value of the impressions for identification, but that on investigation the men were found to be twins, one having enlisted under an assumed name, but complete identity of two records has never been found.

There is occasionally a general family resemblance in the prints of two brothers, but never near enough to cause any confusion. This one case of identical twins shows that in two ova, derived perhaps from the division of a fertilized ovule, the identity is far more exact than we have thought possible.

After identity is discovered by the prints, it is finally clinched by a comparison of the other markings, scars, eyes, hair and body measures. There is no chance of a false denial of identity being accepted.

Subsequent to the use of this new system, the desertion rate gradually declined to a minimum of 2.28 per cent. in 1911, probably the lowest in our history, and though there was an increase to 3.00 per cent. in 1912 and 4.15 per cent. in 1913, probably due to the monotonous service on the Mexican border, it is still about what might be called the normal or expected. That is, such a percentage of unstable, unreliable men exist who will quit any contract on slight provocation or none at all through sheer instability—and will probably do so as long as public opinion regards the offense so lightly.

An unexpected outcome of the finger print system was the identification of dead bodies supposed to have been soldiers. In 1910 the Adjutant General reported a case of a body found floating in the Hudson River, and in which all the usual marks of identification had disappeared but proved by the prints to be that of a missing soldier. In 1911 he reported another case in which the remains were so mutilated by a railroad accident that the usual identification was impossible, but the finger prints established his identity as a missing soldier. Similar cases have been reported from Texas where the soft parts of a body found in the woods, were nearly all gone, but an impression was possible of a few finger tips, and from Manila where a drowned man was identified by the prints though unrecognizable otherwise. In some of these cases, where it was clearly an accident and not a desertion, the charge is of course removed from the man's record, and his body returned to his friends for honorable burial.

It has been found necessary to take the records of all men upon re-enlistment, even though the previous service has been of the best. This has resulted in the discovery of fraudulent attempts to re-enlist under the name of discharged soldiers for the sake of the extra pay or other causes. That is, a man closely resembling the one described in the discharge certificate would assume the name and present himself for enlistment. Since his finger prints could not correspond with the one whom he impersonated, the fraud is discovered when the cards are filed and compared with the original.

The most curious case of all is detailed in the report for 1911. "A man claiming to be a deserter from the army and giving the name of that deserter, was returned to military control at Fort Leavenworth, Kansas, and was tried as the deserter, was convicted of desertion and other charges on his false plea of guilty, and was sentenced to dishonorable discharge with confinement for three and a half years. Upon the receipt of his finger print record in this office after his incarceration

in the military prison it was ascertained that he was not the deserter that he claimed to be, but that he was a man who had served in the same company with the deserter and who had been discharged therefrom on a surgeon's certificate of disability. An exhaustive investigation that was ordered in this case resulted in failure to discover any satisfactory reason for this man's action." Unbalanced people often imagine themselves to be noted criminals but make no such systematized attempt to defend the delusion.

In a few cases men arrested by the civil authorities as deserters and delivered to the military have been shown by the finger prints that they were not the deserters for whom they were arrested. It did not require the testimony of men who had known the deserters, nor any other evidence in fact.

## RHEUMATISM AS A DIAGNOSIS FOR ALL ACHES AND PAINS.

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In the entire domain of medicine no diagnosis is so much misused and so frequently erroneously made as that of rheumatism. Many an ache and pain is diagnosed as rheumatism, because to make the right diagnosis would require time and effort. The medical profession is responsible for telling the public that chronic aches and pains are rheumatism.

The following cases are illustrative:

CASE I. M. Z., 23, single, tailor, Austrian. He came to me for "rheumatism in his right leg." The diagnosis was made by two physicians. The first gave him medicine and advised hot baths, the second prescribed medicine and advised electric treatment. This physician had a fine array of electrical instruments.

His family and past history reveal only that he had a chancre ten years ago. He was treated for several weeks and was "perfectly well till one year ago." Since then he has had pains in the right lower extremity affecting mostly the knee joint, the inner side of the leg and the outer side of the thigh. It was not influenced by changes in weather, but was worse at night.

Physical examination showed a healthy-looking young man, slight general enlargement of the lymphatic nodes, mouth negative, heart and lungs normal, abdomen negative. No Argyll-Robertson pupils or Romberg sign. Reflexes present and the tibiae smooth.

Examination of the affected limb showed no swelling or motor or sensory disturbances except the subjective feeling of pain, no tender points, no circulatory changes. Urine negative. Wassermann \*\*\*. I gave him an intravenous injection of neosalvarsan followed by mercury and potassium iodide internally, and he rapidly improved.

CASE II. M. G., 36, married, tailor, Russian. Complained of pain and burning in the stomach and pain in the lower extremities. He was treated by several physicians for "stomach trouble" and rheumatism in the legs.

His family history has no bearing on the case. Married five years and has one child of 22 months in good health. His first child died at 15 months from measles (?). No miscarriages. His troubles began nineteen years ago, when he had a gonorrheal urethritis. A year later he had a chancre which was treated for a short time. For the last four or five years he has had some digestive troubles and pain in the lower extremities for the last six months. Beginning with the ankle joints, the pain radiates upward on each side till it meets in the epigastrium.

Physical examination: Patient looks depressed. Slight ataxic gait. No general lymphatic glandular enlargement. Slight retraction of pupils to light. Chest and abdomen negative. Marked Romberg sign. Knee reflexes much diminished. Urine negative. Wassermann \*\*\*. Patient is slowly improving under treatment with neosalvarsan and potassium iodide with mercury.

CASE III. R. L., a girl of 22, Russian. Complained of rheumatism in the legs for the last six months. She has been to many physicians and all diagnosed the case as rheumatism except one who treated her for flat feet.

Her family history is indefinite. In her past history, there is

some suggestion of hysteria. Six months before she consulted me, while returning from a dance, she was suddenly seized with pains in both legs and had to be carried home. She had been well before that.

General physical examination showed nothing abnormal. She was very indefinite as to the character and location of pain in her legs. No tender points. No disturbances in motion, but there were areas of anaesthesia. Circulation was perfect. I ventured a diagnosis of hysteria, gave her some medicine and tried, perhaps in an imperfect way, the effect of my psychotherapy. The result of my treatment was a complete failure. I then told her that I would take her to a prominent clinic where she will be examined by a professor. An examination was made by a very able physician, who agreed to the diagnosis of hysteria and in a rather forceful way told her that there was nothing the matter with her legs and that she needed no medicine. The good effect was almost immediate and she has been well for more than two years.

CASE IV. A. B., waiter, 23, complained of pains in both feet and legs and in the lower part of the back, worse when resting after a day's work. While sitting he had to place himself in a particular position to ease himself of pain in the back. He had been treated for over a year for rheumatism.

His family and past history had no bearing on present conditions. A general physical examination revealed nothing abnormal except that he had flat feet. Under orthopedic treatment he rapidly improved.

CASE V. D. R., stone cutter, 45, complained of pain in the left hip joint for two years. Felt better when at work or on walking, but worse after a prolonged walk or on attempting to walk after a day's rest. His first medical attendant was his wife, who diagnosed his trouble as rheumatism and used all kinds of liniments. He finally consulted a physician, who made a similar diagnosis of rheumatism, gave him some medicine and something to "rub" over the hip joint. Physical examination revealed nothing abnormal except some flatness of the left foot. Orthopedic treatment cured his supposed rheumatism.

CASE VI. C. H., 36, single, laborer, complained of pain in both elbow joints and in the right ankle joint. He had some pain in different joints for a year and a half. The prevailing diagnosis and treatment was that of rheumatism. He was never sick previous to the onset of the joint trouble. Denied venereal infection and a complement fixation test for gonorrhea and syphilis proved the truthfulness of his denial. Uses whisky and beer to excess.

Physical examination showed an anemic, poorly nourished man, uncleanly in his habits. Chest and abdomen negative. Examination of the mouth showed the entire buccal cavity in an unhealthy condition. The breath was exceedingly foul. There was marked pyorrhea alveolaris, chronic pharyngitis and tonsillitis. The elbow joints were stiff and painful on passive motion, but no signs of acute inflammation. The right ankle was red and swollen and very painful on motion. Urine negative. Blood examination was not made. I made a diagnosis of infectious arthritis due to oral sepsis, probably the pyorrhea alveolaris being the chief cause. Treatment consisted in the proper care of his teeth by a competent dentist, antiseptic mouth washes, general hygiene and tonics. Improvement was gradual and very satisfactory.

CASE VII. N. D., 53, carpenter. Complained of pain in the right shoulder joint for four weeks, which had been treated for rheumatism by some physicians. Had gonorrhea twenty years ago. There was no redness, swelling or effusion in the right shoulder joint, but on attempting to rotate the arm and place the hand behind his head he complained of pain. There was a point of severe pain on pressure over the deltoid muscle near the acromion process. Diagnosis subdeltoid or subacromial bursitis.

CASE VIII. J. A., 36, clerk, complained of pain in the lumbar region for over two years. During this time he was under the care of his family physician for chronic rheumatism in the back. On one occasion he consulted another physician, who made a diagnosis of kidney disease. Had pneumonia when a boy and gonorrheal urethritis six years ago, denied lues. A general physical examination was negative except that he had a stiff back involving the lumbar and lumbo-sacral regions. He could not bend, had difficulty on rising from a chair or getting out of bed. There was no muscular pain, no signs or symptoms of a spinal cord lesion. An ordinary examination of the urine was negative. The prostate was enlarged, hard and painful on pressure. An x-ray of the spine was taken. Diagnosis, spondylitis deformans, probably of a gonorrheal origin.

The diagnosis of rheumatism was made in these as in many other cases without any scientific reason. In none of these cases was there a history of acute artic-

ular rheumatism, neither was there any cardiac lesion to suggest the possibility of a former acute rheumatic fever. Chronic rheumatism without a previous acute attack is a doubtful diagnosis.

General aches and pains which are so frequently called rheumatism are usually due to chronic infection, chronic intoxication as a result of improper elimination of metabolic waste products, anemia, neurasthenia, and last but not least, to chronic poverty.

The majority of chronic joint diseases are due to infection and the proper diagnosis should be chronic infectious arthritis. A careful history of the case and a thorough physical examination, including the mouth and the urogenital tract together with the necessary laboratory examinations will make the diagnosis more specific. Quite a number of joint diseases without a definite etiology but with more or less definite clinical arthritis deformans, though translated into English it does not sound as a good diagnosis. There still remains the less frequent affections of the joints as traumatic arthritis, hemaphelia affecting a joint, gouty arthritis and arthritis secondary to certain nervous diseases. If one still prefers to call some chronic joint disease rheumatism or rheumatic arthritis it should be the last and not the first diagnosis.

1450 Lexington Avenue.

## FRACTURE OF THE ELBOW IN CHILDHOOD:

### CONGENITAL SACRAL TUMOR.

From the Surgical Clinic of

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#### Fracture at the Elbow.

History.—Patient, female, ten years old, enters the hospital because of an injury to the elbow. Yesterday while sliding on the sidewalk she fell upon her outstretched hand and injured her elbow.

Mark the history, it is very significant to anyone who has studied traumatism at the elbow in children.

In childhood the elbow is a center of traumatism because it is a point of diminished resistance. In other words, the lower end of the humerus is in process of development and ossification—it is an unfinished product and as yet unprepared to offer resistance to an unusual strain. But the unusual strain is frequent in childhood as an instinctive means of defense and protection—when the child falls the arms are naturally projected in front and interposed between the body and the ground (just exactly what happened in this case); the shock transmitted from the ground to the shoulder is centered at the elbow, in great part upon the lower extremity of the humerus; and the articular surface is not only broken but the fragments usually dislocated so that consequences singularly complex are the result.

Now I remark that this history is very significant. What is there about it that arrests our attention?

The fall upon the outstretched hand (in a child) usually means that the hyperextended elbow pries off the lower end of humerus. (In an adult this same force produces backward dislocation of the elbow.) In other words the history of this lesion is the history of a supracondylar fracture.

You observe that the elbow is swollen and ecchymotic, and that manipulation is extremely painful. How shall we proceed in the further treatment of this case?



**Remarks on Method of Examination.**—The obstacles in the way of a thorough examination are many: The child cannot always be interrogated; the history of the injury cannot always be obtained at first hand; the surgeon must often rely on his own ingenuity in interpreting the facts. These facts are gleaned principally by inspection and palpation. But there is no use trying to palpate this elbow. The child resists any manipulation because it pains—if you persist, the muscles only contract and obscure the condition; hence the necessity of anesthesia, not deep, but just sufficient to relax the muscles and permit free palpation.

We shall now etherize the patient so as to permit us to make a thorough examination.

Remember, when a child presents itself after injury to the elbow, there may be a contusion or a dislocation, but *always suspect fracture*.

Again, never hesitate to give an anesthetic of short duration for the examination of every elbow injury.

First—We inspect the injured elbow and note the localization of the ecchymosis—in this case it surrounds the elbow—that makes us suspicious of supracondylar fracture. If the ecchymosis is localized at the sides we look for fracture of the condyles.

Second—We palpate the parts, keeping in mind the normal anatomical relations of the uninjured elbow—especially *the relation of the three bony points*.

I place my thumb and middle fingers on the internal and external condyles and the index finger on the tip of the olecranon. In the normal elbow when the forearm is fully extended these three points lie on the same transverse line (Fig. I) and any modification of this

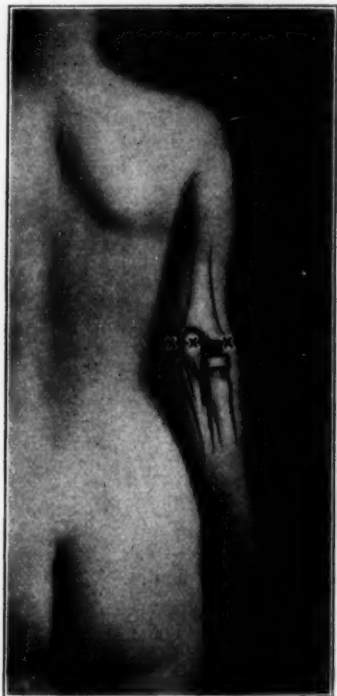


Fig. I. Relation of the three bony points of the elbow in a transverse line.

normal relation of the three bony points is due to fracture or dislocation.

We find here that while the tip of the olecranon has been pulled backward and upward it maintains its relative position—in a straight transverse line with the

epicondyles. In other words the olecranon is higher than normal—it has been displaced backward and upward and it has carried the condyles along with it because it maintains its normal relation with them. There is only one lesion which fits this finding—viz., supracondylar fracture—the lower end of the humerus has been pried off and the fragment (carrying the olecranon) displaced backward and upward, and is held in this position by the strong action of the triceps.

Note the fullness in front of the elbow; this is caused by the overriding fragments which produce a deformity that simulates backward dislocation of the elbow. But on the other hand you observe that the movements of flexion and extension are easily made, this is in sharp contrast to the immobility of dislocation. I can feel the sharp edge of the upper fragment in the fold of the elbow pressing against the soft parts, and there is also crepitus. Even under anesthesia we try to conduct these manipulations in as gentle and delicate a manner as possible in order that we may not exaggerate the lesion and destroy the valuable periosteal connections.

The aim of every examination is precision of diagnosis and this can be obtained only by careful, methodical, clinical examinations supplemented by the x-ray.

**The Value of x-Ray Examination.**—The final word of diagnosis belong to the x-ray, nor should it ever be omitted even when the injury appears trivial. It is impossible by palpation alone to discover all the details of a fractured elbow. In the x-ray we have a valuable aid in making a precise diagnosis. We do not believe that the x-ray is sufficient of itself, nor is it to supplant the clinical examination, or relegate it to second place; but the clinical and radiographic examination taken in conjunction each interprets the other.

After thorough palpation, the x-ray enables us to correct errors, to confirm a diagnosis already made, and to give mathematical precision to our conclusions; and finally when the reduction is made and the retention splint applied, it checks the final error of imperfect reduction and retention. Let me impress upon you that the x-ray picture should be taken and interpreted by those who possess special knowledge and experience. Amateur work in this field is of little value.

However good the picture it is valueless unless properly interpreted.

Remember that the child's elbow is not a miniature adult elbow, it is a joint in the process of development—it consists of osseous regions, cartilaginous regions, and centers in process of ossification; its parts are of



Fig. II. Surface and profile view of a supracondylar fracture. Note the value of the profile radiograph in showing the nature of the injury.



different density—and offer a different resistance to the penetration of the x-rays. The essential factor in the picture is detail, hence the necessity of using soft tubes.

Again in radiographing an injured elbow there should always be two pictures of the same fracture, a surface radiograph and a profile radiograph.

The surface radiograph should be taken with the arm in complete extension, the arm resting on the plate on its posterior surface. The profile radiograph should be taken with the elbow in median flexion, the hand promoted with its internal surface resting on the plate.

In Fig. II we have the surface and profile radiograph of this patient's elbow. Note the value of the profile radiograph in showing the nature of the injury. Here you observe the x-ray confirms the clinical findings of a supracondylar fracture. After the diagnosis is confirmed, the reduction made, and the splint applied a second x-ray should confirm the accuracy of the results.

**Comment on Prognosis of Fracture of the Elbow in Children.**—The prognosis of fracture of the elbow in children must always be guarded; *even under the most favorable conditions of treatment perfect results cannot be guaranteed.* The possibility of some functional impairment should always be emphasized. While the process of ossification in the child is very rapid because of the extreme fertility of the young periosteum, yet consolidation of the fragments however perfect, is compatible with a very imperfect functional result.

I would particularly emphasize that the prognosis of these fractures depends upon:

(a) **Reduction.**—It is obvious that perfect reduction is the prime requisite of perfect functional results; yet it is well to keep in mind the difficulties of perfect reduction and thus be guarded in our prognosis; *for no surgeon, however skillful, can guarantee a perfect result in a fracture of the elbow, however simple.* There are some fractures of the elbow primarily irreducible, such as those rare cases of impaction where surgical intervention may be necessary; or there may be interposition of the fragment in the joint where the interarticular obstacle opposes reposition, and all attempts at reduction are fruitless. These cases left to themselves inevitably produce bad results; immobilization and massage can have but one result, viz., to increase articular inflammation and forestall complete ankylosis. These cases must be relieved by surgical intervention.

Again, we find a certain proportion of cases where the fragment rotates on itself. In supracondylar fracture the fragment may so tilt on itself that reduction is impossible and surgical intervention is necessary to complete a cure.

Finally, there are cases which present certain difficulties in reduction even after the clinical diagnosis and the x-ray have confirmed the findings and reduction seems simple. Such cases are those with very small fragments and great swelling (inter-articular fracture of the condyle, or fracture of the neck of the radius). The fragments are so small that the fingers can secure little hold, especially in the presence of much swelling. Many of these cases escape unreduced and result in defective consolidation.

(b) **Retention.**—Even after reduction is satisfactorily accomplished it is necessary to retain the fragments in proper position.

It must be remembered that many fractures after

reduction have a remarkable tendency to secondary displacement. When the fragment is reduced it may be easily held in position by direct pressure of the fingers, but when we substitute for pressure thus made immobilization by the splint, there is often produced a displacement of the fractured surfaces which results in vicious position.

Again, after the splint has been on a few days the swelling disappears and the splint no longer accurately supports the fragments, which then become displaced.

Thus you observe there are many factors which may interfere with a perfect result.

We have now reduced the fracture and the fragments seem to be in excellent apposition. The next problem is how best to retain the fragments in their proper position.

Let me impress upon you that there is no special position or special splint invariably applicable to each variety of fractured elbow.

Put the arm in that position and maintain reduction by that splint which is best suited to the special indications of the individual case. It makes no difference whether you extend the arm or flex it. So long as the position determined upon maintains the fragments in accurate reduction; *for the best position is the position which holds the fragments in place.* I believe that we shall find the acutely flexed position of the arm ("Jones' position") best adapted for maintaining reduction in this individual case (Fig. III).

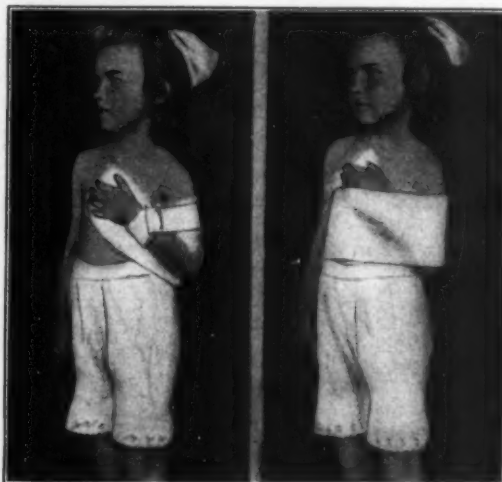


Fig. III. The arm is held in a position of forced flexion by adhesive straps and the dressing completed by plaster bandage enswathing the arm and chest.

We shall at least temporarily put the arm up in this position and have a second radiograph taken; if the picture confirms the accuracy of reduction and efficiency of immobilization then the temporary splint will be made permanent.

**Resume of Treatment.**—The prime consideration in the treatment of fractures of the elbow is not simply a reduction that restores continuity of the fragments, but one that restores functional activity of the joint.

Remember that in the fracture of a long bone a slight discrepancy of the fragments is compatible with perfect functional result. But in fracture of the elbow even slight abnormal prominence in the interior of the joint will be an obstacle to normal joint movements, and may be the cause of permanent disability.

It is obvious that reduction here is something more than the reposition of fragments; it implies a coopera-

tion so accurate and a retention so complete that the resulting joint surfaces will permit of normal joint movements.

If the fragments be accurately reduced and held in this position the question of duration of immobilization and the special position in which the limb should be placed are secondary considerations.

The fundamental fact must be appreciated that it is not the duration of the immobilization that produces ankylosis, it is the faulty reduction causing periosteal proliferation that locks the joint; and further, *no special position of the arm will obviate the disastrous results of an incomplete reduction. The general rule to be followed in all cases of fractured elbow is—Accurate reduction maintained by that splint and that position of the arm which is best suited to the special indications of the individual case.*

Each fracture is a special problem, with its individual needs and its peculiar indications; and while no precise rules can be formulated, certain precepts may be followed which will be a safe guide in all cases.

**First Step:** Find out exactly just what is fractured and be satisfied with nothing but anatomical accuracy.

A clinical examination under anesthesia is the first requisite; but it is never sufficient; it must be supplemented by an x-ray examination. Two radiographs should be made, one profile, and one surface view. The radiographs should be made and interpreted by a radiographer of experience. *The x-ray picture without proper interpretation is futile.*

**Second Step:** Reduce the fracture by such maneuvers as are efficient in accurately coapting the fragments (flexion, extension, traction, direct pressure, etc.). A maneuver is selected for its efficiency and not according to precedent. Whatever the maneuvers, care should be taken to avoid any rough manipulations, which only exaggerates periosteal lesions, and consequent impairment of function. Firmness and gentleness are always more effective; they accomplish more and damage less.

**Third Step:** *Immobilize permanently only when assured that reduction has been obtained, and that the position of the arm and the splint selected are adequate to maintain reduction.*

This will be evidenced by (a) normal conformation of the parts; (b) a normal range of flexion and extension. But best of all is confirmation furnished by a second radiograph.

No permanent immobilization should be attempted until satisfactory evidence has been obtained that the reduction, position of arm, and splint, are as perfect as the character of the injury permits.

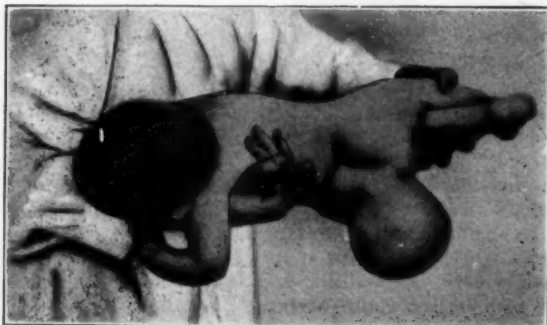


Fig. IV. Sacral tumor before operation.

### Congenital Sacral Tumor.

**History:** Patient, female, three months old is brought to the hospital because of a large sacral tumor. The tumor as you observe is about the size of the child's head. It is attached by a broad pedicle to the left of the median line over the sacrum. (Fig. IV.)

As I palpate this tumor I note that it is tense and has a cystic "feel." The skin over the tumor is thickened and presents a few minor cysts varying from a split pea to a small plum in size. The tumor fluctuates but as I place my hand on the child's head I observe that this fluctuation is not communicated to the fontanelles.

There is no paralysis and the child appears bright and well nourished.

Let me now call your attention to some significant facts in the mother's history.

There is no similar abnormality in the families of either the father or mother; but the history of the mother is of interest in connection with the existent abnormality. She was 28 years old at the birth of this child—her first pregnancy. She had never been seriously ill before, except for an injury she received by falling from a step-ladder which confined her to the house for six months—she says that even upon moderate exertion syncope would follow. This state gradually wore away. She was married twenty months before she missed her first menstrual period. At the end of the third month of pregnancy she was threatened with a miscarriage, there was profuse vaginal bleeding, lasting about four hours. A month and a half later she fell twice, and on each occasion struck the end of her spine, to which impression she attributes the deformity on the back of her child.

During the seventh month of pregnancy she again fell a distance of about four feet striking heavily on her right hip. With the exception of these accidents her puerperium and labor were normal.

The mother did not observe the growth on the child's back until two weeks after confinement, at that time it was the size of an orange and so transparent that the mother says "you could fairly look through it."

**Operation:** We shall anesthetize this patient with ether; whether infant or adult, ether is always the safest anesthesia. We prepare the skin by painting it with half-strength Tincture of Iodine, the full-strength is too irritating for the skin of infants.

A curved incision on either side of the base of this tumor will give us sufficient flap to cover in the remaining raw surface after the tumor's extirpation.

As we reflect back the flaps we note that the interior of the tumor consists of a group of multilocular cysts which contain thick sebaceous material. The pedicle of the tumor is easily excised.

Note, that at the point where the pedicle was anchored, there is a defect in the sacrum through which the wall of the rectum bulges as the child attempts to cry. (The anesthetist is wisely giving a very light anesthesia and these reflexes are thus observed.)

We shall close this defect by suturing over the fascia from either side.

The skin is now closed and sealed with collodion. We shall purposely omit gauze dressing because of the proximity of the rectum and the consequent danger of infection. (Note: the wound was completely healed in ten days, and the happy results are shown in Fig. V.)

**Comment:** There are many points of interest in this case. Congenital sacral tumors belong to the group of teratoma. They may or may not be associated with



Fig. V. Showing result after removal of sacral tumor.

meningocele. Their mode of origin is still under discussion.

One school claims that they are the result of misplacement of germinal fragments, while others contend that they are of bigerminal origin, i.e., that such a tumor represents an incomplete monstrosity or twin.

However it be, these growths are cystic, have a fibrous basic structure, and contain various secretions, chiefly the fatty grumous material so characteristic of dermoids.

They sometimes contain neuroglia and ganglionic cells, and because of this they have been called *neuro-cpitheliomata*. In size these tumors vary from a pea to that of a child's head. They are usually situated in the mid-dorsal line of the sacrum (which bone may at times be reduced to a mere shell of horseshoe shape) at its junction with the coccyx. If the tumor be at all large the coccyx is absent.

Another interesting fact is that sometimes these tumors are situated *in front* of the sacrum or coccyx and then give symptoms of intrapelvic pressure. Cases are on record where the latter growths have discharged their contents into the rectum. If, when confronted with such a case, spina bifida can absolutely be ruled out, the question naturally arises, are we dealing with a malignant neoplasm. The chief diagnostic index of a malignant tumor is its progressive growth. This, of course, is absent in a simple congenital sacral tumor. However, Murphy observes that sudden enlargement may occur from a mild infection which does not frankly manifest itself, and may be taken for excessive neoplastic activity.

This author further observes that although these tumors are very properly regarded as benign, it should be remembered that they sometimes contain testicular and mammary tissues—structures which may easily undergo malignant degeneration. In the case before you the tumor grew from birth on. This growth I believe was due to accumulating sebaceous secretions

of the skin, because there is absolutely no evidence of infection. Spina bifida usually carries in its train cardinal symptomatic features which should prevent error in diagnosis. These are paralysis, convulsions and more or less hydrocephalus.

Pressure on such a tumor produces bulging at the fontanelles, and the child's mentality is observed to be seriously impaired. The x-ray may be of much assistance in making the diagnosis.

**Prognosis** is good in proportion as the tumor is uncomplicated by intimate relations with the spinal canal. Three-fifths of the fatal cases are due to surface ulcerations and consequent infections.

394 Clinton Avenue.

### TUBERCULOSIS OF THE KIDNEY—HYPER-TROPHIED PROSTATE AND TWILIGHT SLEEP.\*

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#### Tuberculosis of the Kidney.

The first patient to-day is a man on whom I have made a diagnosis of tuberculosis of the right kidney. I shall cut down upon the kidney, remove it, and we will discuss the case after the operation is completed.

**Operation**—This man's muscular development is enormous. In the moving picture play, "Cabiria," a gigantic negro plays one of the principal rôles and does all kinds of feats of strength. This patient could well have filled that part so far as his muscular development is concerned. I anticipate much difficulty in removing the kidney on that account.

I first make the usual incision obliquely over the flank and finally come down to the perirenal fat. I palpate the kidney, but it is lying so high up under the rib that I have insufficient room to remove it through the incision already made. I enlarge my incision anteriorly and partially divide this tremendous bunch of the fibres of the erector spinae muscle, which is fully three times the size of those which we usually find, but even with this increased space I am unable to reach the kidney to manipulate it. I shall now proceed to excise the twelfth rib. Having excised it, and with my retractors in place, you will see the great gain in space which I have acquired. The kidney is now comparatively easy to palpate and free from its adhesions. I cannot lift it out on the flank because the pedicle is too short, so I isolate the pedicle as much as possible and with a Deschamp's ligature carrier, armed with heavy braided silk, I tie the pedicle in two halves, thus securing the ureter and vessels. For the sake of security I place a kidney pedicle clamp above the ligatures and cut off the kidney close to the clamp. Now that the kidney is removed, you can see the open gaping mouths of the renal artery and vein. I grasp the pedicle with a Kocher clamp to hold it and slowly and cautiously open the clamp. There is no hemorrhage, and I know that we have the vessels securely ligated. We now inspect the wound for accidental tears in the peritoneum, but find none, so drop the pedicle back into its place and pack the wound with a Miculicz tampon.

While Dr. Read is inserting the sutures I will give the history of the case:—

This man is a negro, 35 years of age. Last spring

\*Clinical lecture at Long Island College Hospital, Brooklyn.



he noticed terminal hematuria every time he urinated. The blood stopped and then began again in November. He consulted me November 2nd. With the cystoscope the bladder appeared to be normal. I catheterized the ureters, but on the right side the catheter was blocked and no urine flowed. On the left side the indigo carmin returned in eight minutes and the urine showed no pus with 11 grains of urea to the ounce. The bladder urine contained one per cent. of pus and no casts.

Up to this point I had only acquired a partial knowledge of the case and that was that the left kidney was secreting normal urine. As to the condition of the right kidney I was still in the dark.

On November 10th I cystoscoped him again and found two or three thin-walled papillomata on the anterior surface of the bladder, just within the sphincter, which I had missed on my first examination. The question then arose in my mind: Were these papillomata responsible for the bleeding? At the same time I catheterized both ureters, and this time I was successful in getting a return from both the right and left sides. The indigo carmin returned simultaneously from both kidneys in twelve minutes, but the right urine contained two per cent. of pus with nine grains of urea, while the left contained no pus with sixteen grains of urea. A guinea pig was inoculated with urine from the right kidney. On November 16th I destroyed with the high frequency current the small thin-walled papillomata in the bladder and on the 18th a radiograph was taken by Dr. Eastmond, who excluded stone in the kidney and ureter.

We had gone, then, as far with the examination of the patient as was possible under the circumstances and still we had not arrived at a diagnosis. We had, however, ascertained that the left kidney was healthy and normal and that there was pus from the right kidney with a low urea output. We had excluded stone from that side, but the differentiation between catarrhal pyelitis and tuberculous pyelitis remained *sub judice*.

On December 15th the guinea pig which we had injected three weeks before with the right kidney urine, was autopsied and the omentum, spleen and liver were found to be all tuberculous. We had, then, by a slow process of careful examination and exclusion, come to a diagnosis of tuberculosis of the right kidney.

I will take the kidney just removed and split it in two, so you can see whether or not my diagnosis was correct. I split it and open it as I would a book, and here in the parenchyma you see these three foci of broken-down cheesy tissue secreting pus which is pouring into the pelvis of the kidney. My preliminary diagnosis is thus confirmed by the result of the operation.

To one who is doing this work every day it does not seem so very wonderful to be able to make an accurate diagnosis of the kind before operation, but when I stop and look back at the conditions of kidney surgery in my student days and then consider what we can do to-day, it seems to me even now perfectly marvelous that we should be able to diagnosis with absolute accuracy the presence of three or four cheesy tuberculous nodules in an organ lying within the body which we cannot see or palpate.

With this case before you a few words about kidney tuberculosis in general may rest in your minds more firmly than if you had read them a dozen times in a book. The infection in every case of kidney tuberculosis is not an ascending one from the bladder, as used to be supposed, but the tubercle bacilli are carried to the kidney through the blood current—so-called haematogenous infection. One kidney alone is affected at first, but, in the course of time, the other one always

becomes involved in the same way, through the blood current.

In the early stages of tuberculosis of the kidney the symptoms are very slight. Indeed they cause so little trouble that it is apt to be overlooked. The patient notices only some turbidity of the urine, slightly-increased frequency in passing it, especially at night, and as the ulceration extends in the parenchyma of the kidney and a blood vessel is opened up, hematuria may be present, but is not constant.

Later on, after the bladder becomes infected by the tubercle bacilli descending through the ureter with the urine stream, ulcers form in the bladder and then the symptoms are marked—frequent urination, tenesmus, quantities of pus in the urine and more or less frequently hematuria.

In making a diagnosis in these cases the practitioner should suspect tuberculosis in every case of cystitis which is not caused by stone or enlarged prostate and which is not cured by bladder washing. Indeed the action of nitrate of silver, which is so curative in most cases of cystitis, distinctly aggravates the symptoms in tuberculous cystitis and in this way may be used as a diagnostic agent, for if a cystitis grows progressively worse under washing with nitrate of silver, the chances are that it is tuberculous in origin. An examination of the urine will show pus cells in large numbers and an absence of bacteria. The tubercle bacilli are present in all these cases, but are very difficult to find, and many slides may be examined before they are discovered. Sometimes they are easily found, in which case the diagnosis is established at once. Care should be taken, however, that the examination is made by a capable pathologist, for the smegma bacillus resembles the tubercle bacilli very closely and a mistake in diagnosis may easily result from a confusion of the two. If no tubercle bacilli are found and we suspect the presence of tuberculosis, the point may be definitely settled by animal inoculations. The peritoneal cavity of a guinea pig is injected with urine from the bladder or preferably from the right or left kidney. The animal is killed in three weeks, and if the patient is tuberculous the evidences of tuberculosis will be found in the pig. The tests of Von Pirquet and the injection of old tuberculin may also be used as confirmatory, but are not nearly equal in value to that of animal inoculations.

Having decided, then, that the patient is suffering from tuberculosis of the kidney, the important question to decide is as to which kidney is affected. This can only be done by catheterizing the ureters and examining the right and left urines separately. If we find pus cells on one side, low urea output and delayed indigo carmin, while the other side shows no pus, normal urea output and normal excretion of indigo carmin, we then know which kidney is affected. We must then differentiate between renal calculus, catarrhal pyelitis and tuberculosis of the kidney, and the diagnostic steps I have already indicated to you in the description of the examination of this patient.

The prognosis of renal tuberculosis with early operation is excellent. The diseased organ with its focus of tuberculosis can be removed. The other kidney is amply sufficient to support life, and unless the patient has foci in other parts of the body, the future recovery is assured. If the kidney is allowed to remain and palliative treatment is adopted, with the hope that nature will restore the integrity of the affected organ, the patient's life will be sacrificed. It is a common occurrence at the autopsy table to find the scars of healed pulmonary tuberculosis, but we never find at autopsy indications of a tuberculosis of the kidney which has

healed spontaneously. On the contrary, tuberculosis of the kidney becomes progressively worse, perinephritic abscess may form, the ureter may become blocked and the kidney converted into a sac of pus and urine (hydronephrosis), or if these complications do not occur, the other kidney becomes affected with tuberculosis or a nephritis and tuberculosis develops in other parts of the genito-urinary tract, such as the testicle or prostate, and in the course of a few months or years the patient, whose life might have been saved by early operation, is sacrificed to the too-conservative treatment of his medical adviser.

#### Hypertrophied Prostate.

The next case is an old gentleman of 74 with an hypertrophied prostate. He has been troubled for ten years with frequent urination, which has recently increased, and he now passes his urine a dozen times by day and six or eight times at night. Up to the present time his general condition has not been greatly affected. He feels well, his appetite is good and his strength and vigor are unimpaired.

Rectal examination shows the prostate to be moderately enlarged and with the finger I can with difficulty reach the upper border. The cystoscope shows an enormous enlargement of the middle lobe projecting up into the bladder. I advised him strongly to let me remove his prostate by the suprapubic route before impairment of his health had begun, as it surely would in the course of a few months.

In these old men with enlarged prostates, with broken rest and absorption from the residual urine retained in the bladder, the back pressure on the kidneys, surely leads to nephritis, pyelitis, chronic urosepsis, and an operation performed under such conditions is attended with considerable danger to life.

This man has had for some time six or eight ounces of residual urine and before proceeding to operation I considered it safer to drain his bladder by means of a permanent catheter for at least a week and then before deciding to operate to make sure that the functional activity of the kidneys was sufficient by means of the phenolsulphonethalein test. We have now had him in the hospital for two days wearing a permanent catheter, but his urethra is so irritable and the catheter causes him so much discomfort that I am obliged to adopt a different method of draining his bladder. To that end I shall do a simple suprapubic cystotomy, introduce a self-retaining catheter and carry on the drainage by this means for a week. As a rule, I am not in favor of the two-stage prostatectomy. In most cases we can drain the bladder sufficiently by means of a tied-in permanent catheter in the urethra, but this is one of those exceptional cases where a two-step operation is strongly indicated. One objection to the two-step operation is the fact that two anesthetics have to be given.

In considering the treatment of this case it occurred to me that, as the obstetricians have found the "twilight sleep" to be an admirable means of allaying the pangs of childbirth, the urologists might take a page from their book and use "twilight sleep" for some of the minor surgical procedures. We accordingly injected this old gentleman two hours before the operation with one tablet containing hyoscin, 1/200 gr., morphin 1/8 gr. and cactoid 1/128 gr. Half of this dose was repeated an hour later. The patient dropped into a quiet restful sleep, but could be easily aroused and as you see him now before you he is sleeping as peacefully as a child. There is no stertor, the respirations are normal in depth and time, his pulse is not rapid and by shaking him and speaking to him I can arouse him. To insure

the painlessness of the operation I shall inject a 4 per cent. solution of novocain under the skin of the suprapubic region. Now I am ready to operate. As you see, the incision through the skin is perfectly painless. I separate the recti muscles, expose the bladder, put in retraction sutures, open the bladder and insert a self-retaining catheter. During all these manipulations you see the patient is sleeping peacefully. With a purse string suture through the incision in the bladder I hold the self-retaining catheter in place and then close the abdominal wound with some silkworm gut sutures and a small pack in the space of Retzius.

We will keep the bladder of this patient empty for a week, use irrigations twice a day with nitrate of silver, forced ingestion of water, keep him on a nitrogen-free diet and then, if at the end of a week the phenolsulphonethalein test shows his kidney secretion to be free, we will remove his prostate by the suprapubic route, using the opening which we made to-day.

This preliminary treatment is the most effective means of reducing the mortality in prostatectomy and by means of the tripod of safety as I call it, namely, preliminary drainage, rapid operation and the Murphy drip afterwards, we have been able to reduce the mortality of prostatectomy to such an extent that it may be considered a very safe operation to-day.

32 Schermerhorn St.

#### PHYSIOLOGICAL MYTHS AND DIETARY FALLACIES.

THEODORE WILLIAM SCHAEFER, M. D.,  
Kansas City, Mo.

The faculty of the imagination has aided the scientist in making some of the most wonderful discoveries in astronomy, physics and chemistry. It has at the same time aided the scientific writer in popularizing certain pet scientific speculations that have been accepted by the multitude as established truths. Writers on the practice of medicine frequently enlarge their descriptive powers when depicting the protean pathological phenomena that arise from the Hydra of disease. The pharmacologist allows his fancy full sway in romancing a scientific description of the pharmacological action of a drug. In a similar manner does the physiologist also allow himself a certain latitude of imagination in romancing scientific matters pertaining to physiology.

Facts, however, are stranger than fancy. The flight of the mind from fiction to error is not far as many of the greatest scientists have fallen into the same habit of indulging in the phantasmagoria of scientific picture thoughts. The physician, to whom the practice of medicine becomes an art, has need of visual representations of the exterior and interior of the various forms of pathological conditions. Physiologically speaking, the diagnosis of disease becomes a matter of reproductive imagination. Many of the symptoms viewed as pathological entities, are wholly of a subjective nature and, when studied from a psychological point of view, resolve themselves into phantasms.

The diagnosis of a physician is based upon a hypothesis. Some of the hypotheses of medicine consist in assumptions as to the supposed minute physical or ultra-microscopic structures and operations of the organism. From the nature of the case, these assumptions can never be proved by direct means. Their only merit is their suitability to express phenomena. They are simply representative fictions. We observe from what has been said that pure imagination must



not replace our reason in the deduction of relation and law from classified facts. But, none the less, disciplined imagination has been at the basis of all the great discoveries and inventions.

"Meat food imparts energy and alacrity, the predominating vegetable regimen gives rise to weakness and indolence. The meat-eating ferocious animals become tame on a gradually accustomed vegetable food. While, conversely, tame animals assume more and more a ferocious disposition when fed on a diet of meat. Thus von Liebig tells us that a captive bear in Giesen was alternately fed only on meat and then on a vegetable diet; on a regimen of meat it showed its wild disposition, for it became cross and dangerous. On the other hand, when fed on vegetables the bear was as tame as a lamb." Wonderful! And this very kind of scientific romancing occurs in a work of a high order as Dr. J. König's, *Die menschlichen Nahrungs- und Genussmittel*, Zweiter Band, 1914, p. 371. The writer relegates these fictitious, quasi-scientific statements to the domain of scientific mythology. He is surprised that scientific works like König's books on food-stuffs perpetuate such fictions.

Physiology, belonging to the semi-sciences, abounds in numerous hypotheses that succeed, contradict, and finally destroy one another. It is a commonplace truism that does not need to be dwelt upon further—they furnish us many examples of what has been rightly termed as *scientific mythology*. We are still in *vinculis praeteritorum*, as our minds are traditionally dominated by entailed antiquities and influences emanating from the past. Many of our traditional views and beliefs are preserved to us as rudiments of the past. But they do not seem to further develop. They remain restricted to their soil until they finally become extinct.

We are sadly in need of a more advanced knowledge of the normal physiology of digestion to shed light upon the pathology of many diseased conditions of the organs of digestion. That there remains much to be done on the physiological as well as the pathological side of the subject of digestion is the firm conviction of all those who are cognizant of the fact that gastroenterology has not actually measured up to the scientific standards of our times. In studying the phenomena of digestion we must take into account certain psychological and physical factors and not the crude chemical or mechanical workings in our investigations. The nervous system is certainly a very important factor to deal with, for it controls the functions of the organs of digestion like a *primum mobile*. It should be remembered by the therapist that these functions are *not* merely mechanical; that is, purely physical and chemical, but are largely under the direct influence of the nervous system. Right here it is proper to state the very serious difficulties that beset the attempts of all the experimental methods. In life we are dealing with ever varying factors. This is not the case so much with dead matter. Plurality of causes and intermixture of effects occur in the most aggravated shape in all vital processes.

Moreover, medicines and therapeutic means, being natural kinds, have so many possible ways of acting that the search and establishment of the precise property that affects the system is all but hopeless. We must take into account the eternal fluctuations of physiological conditions, which are due to the variability of nervous irritability, etc., besides the errors in the comprehension and critical examination of the sensations, changes, biochemical and biophysical, etc., which are elicited as the result of investigations. The physi-

ologist, who should also be a psychologist, in his experiments on the living body, is dealing with *living* and not with dead matter. He is aware that living matter acts different from dead matter, because the former is under the influence of the nervous system. This brings the whole scope of the operations of the living body under the qualitative and quantitative determining influence of the psychophysical parallelism. From this we perceive the fallacy of the *raison d'être* of some of the experimental methods. The brilliant, successful experiment *in vitro* or *extra vivum* becomes unsuccessful when performed *in vivo individuo*!

Much that has been written on this subject cannot be accepted as conclusive. Indeed, it is a fact that some of the published literature of the day is very much antiquated and cannot stand as a positive guide for the general practitioner. The reproach attached to many of our erroneous views pertaining to the physiology of the stomach and digestive apparatus is responsible for the widespread scepticism with which the subject of diagnosis and treatment of the gastro-poietic organs is regarded.

It is but natural that certain individuals should be liable to express the smaller sides of their human nature in medical commercialism. We have too many medical thaumaturgists and surgical prestidigitators in gastroenterology who are responsible for the prevalent crazes and fads, many of these having emanated from those higher up. A large number of these persons know nothing of the chemistry of digestion and biochemistry, but are constantly claiming that they can do miraculous things and that they are making "wonderful discoveries"! They evidently help themselves, but not the patients.

Waldheim Bldg.

#### The Relationship of the Workmen's Compensation Law to the Medical Profession.

Notwithstanding many expressed views to the contrary, we are of the opinion that this law is one of the most just enacted this many-a-day. Furthermore, the medical profession has every reason to be grateful, as it is the first time that our legislative body has, by the enactment of a law, recognized the rights of medical men in and out of hospitals to be paid for their services when rendered to injured workmen in the employment of employers financially able to meet the charge for such services. In the past no matter how honest the injured wage-earner was, his enforced idleness and loss of salary, together with the expense of supporting his family, left him so heavily in debt that paying the doctor for his services was beyond his power. Heretofore also it was the practice of many employers, including corporations of wealth, to cause their injured workmen to be ambalanced off to a hospital and there thrown upon the charity of the institution for food and nursing, and upon doctors (serving gratuitously) for medical attention—pauperizing the patient and stealing from charity. The Workmen's Compensation Law does away with this species of contemptible duplicity—for which let us give thanks!—(*New York State Journal of Medicine*, November, 1914.)

#### Tinea Favus.

Acidi Salicylici.....	3ij
Acidi Chrysophanici.....	3ij
Lanum .....	5x
Petrolati .....	3vij

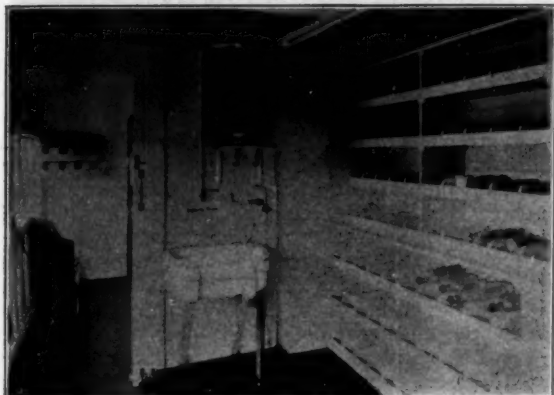
M. Sig.: Remove the crusts, and rub in the ointment for fifteen minutes at night.

—Merck's Archives.



## In the Ambulance Trains of the Warring Nations

(Photographs from Janet M. Cummings.)



AN ENGLISH PHARMACY CAR.



A WARD ON AN ENGLISH AMBULANCE TRAIN.



FRENCH CAR BEFORE BEDS ARE MADE UP FOR WOUNDED.



OPERATING ROOM IN A GERMAN RAILWAY AMBULANCE CAR.



PREPARING PATIENTS' FOOD ON GERMAN AMBULANCE TRAIN.

## Special Article

### The Medical Reserve Corps, U. S. Army.

The Congress, by an act approved April 23, 1908, established a medical reserve corps and made it an integral part of the Army of the United States. This corps was organized "for the purpose of securing a reserve corps of medical officers available for military service." In accordance with the act many prominent civilian physicians in various parts of the country were nominated by the President and confirmed by the Senate as first lieutenants and the corps became an entity. Since that time hundreds of medical men have been commissioned and today the corps numbers about 1,400 officers.

Of these, according to the Army Register of 1914, 91 are on the active list. Over 60 received their appointments between 1908 and 1910 and are doing garrison and other duty, while most of the remainder are at the Army Medical School. Some of the men included in that number became first lieutenants in the Medical Corps in 1914, but the appointment of their successors makes the figures practically correct.

In other words, there are in the United States about 1,300 men holding a commission as first lieutenant in the United States Army and practising civil medicine. They are bona-fide Army officers, as their commissions confer upon them "all the authority, rights and privileges of commissioned officers of the like grade in the Medical Corps," and when on duty they receive the same pay and allowances.

Of what use are the officers on the inactive list to the army?

What are they doing for the government?

What is the government doing for them?

With great regret one must answer these questions as follows:

No. 1. At present practically none.

No. 2. Nothing.

No. 3. Absolutely nothing.

These answers will appear to the uninitiated as unbelievable, but they are true.

The inactive list of this great corps comprises one of the finest bodies of professional men in the world. On its roster are to be found some of the best known men in American medicine. Great surgeons, internists, therapists, sanitarians and leading representatives of all the specialties are on the list, but so lightly is their official connection regarded that their names are not even mentioned in the Army Register. The Navy is more thoughtful in this connection and its inactive reserve surgeons, headed by J. C. Da Costa and Hobart Amory Hare, are published as on "unassigned" duty.

Here we have, then, a large body of men, professionally among the leaders of the medical profession of the country, in the anomalous position of officers in an Army of which they are a part only so far as a piece of parchment signed by the President of the United States can make them.

Wherein lies the fault?

The only conceivable reason is that the Congress does not realize the potential value of the Medical Reserve Corps. It has created an organization for the specific purpose of securing trained medical officers whose services can be called upon in time of stress, but it forgot that most important feature—how to enable the men to become trained officers. The possession of a uniform and the right to wear it does not constitute a trained officer. That is the position of the inactive

officers today. They can wear the different uniforms of the service if they care to purchase them. They can belong to those clubs and organizations to which only Army officers are eligible. They are entitled to the social position accorded Army officers if they practise near Army posts. These things and many more are theirs if they desire, but—and pay good heed—these advantages do not make them *trained* medical officers, as military medical men must be trained. Consequently, out of the approximate 1,300 inactive officers in the Corps, it is safe to say that aside from the small percentage of militia medical officers, 90 per cent. of that great number are *absolutely ignorant* of all that constitutes the duty of a first lieutenant in the Medical Reserve Corps. They could not return the salute of a soldier, officiate at sick call, inspect kitchens or sinks, do "paper work" or any of the multitudinous duties that fall to the lot of a medical officer, because there is no counterpart for these duties in civil life. Professionally the inactive officer is the peer and often the superior of the regular officer, but military medicine is vastly different from civil practice and requires training along very different lines.

Of the 90 per cent. of men ignorant of military amenities, usages and practices, a large percentage are anxious to perfect themselves in their shortcomings, but—the Congress has made no provision for their training, so they must perforce remain in ignorance. It is not the fault of the officers of the Corps. They have begged to be given an opportunity to go to a camp of instruction, but the same old stereotyped answer is returned, "no appropriation."

Militia medical officers go to camp every year and to an armory once or twice a week. In consequence they are well trained and in time of war would do effective work in the field. Where would the Reserve Corps officer be if ordered to active duty and put in command of an evacuation hospital?

The members of the New York Division of the Association of the Medical Reserve Corps, have been most active in their efforts to get an opportunity to fit themselves for military service. They have had the active co-operation and assistance of regular officers stationed in and around New York, who have given them interesting talks, but it is doubtful if five men in the division could successfully order the erection of an officer's tent or go through the litter drill. Indeed, very few have ever seen this work done.

The New York officers, upon their organization two years ago, were most enthusiastic, but as time went on and the indifference of the Congress to the Corps became more apparent interest slackened. Attendance at meetings fell off, some resigned to accept commissions in the Navy, where service on ships was promised, and others resigned as they saw nothing ahead. Some men became lukewarm, but kept the commission in the hope that some day they would have reason to value it for what it really means.

The only work given the men consisted in sending twelve to Gettysburg in 1913 to serve during the week of the veterans encampment. As far as it went the experience was novel and the few attached to the field and regimental hospitals gained a little real insight in the work of the medical officer. In 1914 it seemed as if some men would be ordered to Tobyhanna, Pa., for instruction. Two majors of the Medical Corps were sent there as instructors, but the old bugbear—no appropriation—again loomed up, so that only a few officers took advantage of the occasion. Uncle Sam can hardly expect physicians to leave lucrative practices and

pay all their traveling and living expenses while studying to better serve their country. There is a limit to the patience, even of a medical reserve officer, who is fighting hard to perfect himself, so that he can serve a government that would seem to be fighting just as hard not to allow him to do so.

This fight is an unselfish one. Unlike many positions under governmental control, there are no "pickings." The high character of the inactive officers dissipates any suggestion that financial consideration plays any part. Active service would mean tremendous loss to the great majority of the Corps, as many of the city practitioners pay as much for office rent as they would receive in a year's salary as first lieutenants. These men are actuated solely by the highest patriotic motives. Possibly the feeling is best expressed by quoting from the masterly address of Dr. Henry C. Coe, of New York, the most active first lieutenant on the inactive list, to the graduating class of the Army Medical School last June.

"We are," he said, "soldier and citizen alike, essentially men of peace, but deep within us smoulders that hidden fire of patriotism, civic as well as military, ready to leap into flame when there is wrong to be redressed and the honor of the flag to be upheld.

"I beseech you, do not envy us our fine houses and our worldly success. Yours is the better part. You will never know the fierce competition of modern life, in which the weaker is thrust to the wall; the petty desire for notoriety, the ignoble straining after money and social distinction. In your little circle your faults, your virtues, your present attainments and future possibilities are all recognized and you are accepted at your 'face value.'

"To be content with small means," as Stevenson puts it, to realize that 'it is better to toil hopefully than to arrive'—is not this the true philosophy of life? I wish that I could make you feel how much sweeter and manlier and more helpful you can make your lives, how much more of a benediction to others than can we who are handicapped by our artificial environment. The virtues of self-control, of prompt obedience, of nice regard for the rights of others, especially your inferiors; the strain of city life, the rush of business, the keen professional competition too often destroy these virtues in us, if we ever had them. To escape from these sordid cares, to breathe the free air of the camp, to renew all the sacred traditions that cluster around the flag, to be under canvas again with real men—this, to me, is like inhaling the ozone of the mountain top after breathing the fetid atmosphere of the marshes."

Can the Congress afford to ignore the spirit that actuated the writer of those stirring words? As a professor in the medical department of the New York University, formerly Bellevue, for many years, he has taught many men on the army's active list. As the writer of standard text books many other active officers have gained wisdom from his written words. As president of the New York Division Dr. Coe worked long and faithfully to obtain the opportunities for the instruction of the men in his organization, but without avail. In November he relinquished the presidency to Dr. Reynold Webb Wilcox, who in his quarter of a century as a teacher of medicine at the New York Post Graduate, taught more than 11,000 physicians, and whose text books on practice and therapeutics are the constant companions of thousands of practitioners. He will put forth every effort to obtain recognition for the corps and in this he will be aided by the divisions in Chicago and St. Louis.

Will the Congress pay heed or will it pursue the course of watchful waiting, which has been so consistently carried out since 1908?

Potentially the Medical Reserve Corps is a splendid organization. As at present constituted it is valueless to the country and membership in it is valueless to the individual.

Its members are striving for the light of knowledge,

which has ever been denied them. If such a course is pursued the Corps will fall into innocuous desuetude and its value entirely lost. It will be discredited and good physicians will decline to again associate themselves therewith.

## Diagnosis and Treatment

### The Therapeutic Values of Fischer's Solution.

Rufus Southworth of Cincinnati observes that any therapeutic measure which aids the kidneys in resuming their normal function during acute illness finds a field of usefulness in a large number of diseases which vary widely in their pathology, but which have in common this element of renal insufficiency.

Such an agent has been found by Dr. Martin H. Fischer of Cincinnati, in the form of the solution consisting of sodium carbonate (crystallized), 10 gm., and sodium chloride, 14 gm., dissolved in one litre of distilled water. Southworth first used Fischer's solution in a case of persistent vomiting of pregnancy in the third month. Vomiting had begun three weeks earlier, and when seen she had retained nothing but a little cracked ice for nearly sixty hours. Cerium oxalate, bismuth subnitrate, cocaine hydrochlorate, internally; ice caps applied to the epigastrium, etc., externally, were employed without result. On the evening of the fourth day sodium bromide, gr. xx, was dissolved in one pint of Fischer's solution and given per rectum by the drop method, about two hours being employed in giving the sixteen ounces; the thirst was at once relieved and the patient dropped into a deep sleep, awakening in the morning much refreshed; another twenty grains of the bromide in a pint of Fischer's solution was given by the same method. At noon a teacup of bouillon with a half a slice of plain toast was given by mouth; it was greatly relished by the patient and produced no nausea. A larger quantity of the same nourishment was given at 4:00 and 8:00 P. M. with no ill effect. The next day she ate her usual breakfast, dinner and supper, and at no subsequent period of her pregnancy did she have a return of nausea or vomiting.

Southworth's second case deals with a patient who had had a chronic nephritis for ten years.

After several days of great mental and physical exertion, during which time the excretion of urine had been between fifteen to twenty ounces, per day, the patient developed uremic symptoms. There was a heavy urinous odor of the breath; semi-unconsciousness from which he could be but partially aroused, and pulmonary edema; associated with an hemiplegia involving the left side, interfering with articulation and making deglutition difficult. Efforts were directed toward inducing the kidneys to resume the excretion of urine, of which there had been none for a period of eighteen hours. Citrated caffeine, gr. III, and calomel, gr.  $\frac{1}{2}$ , were given at four and two-hour intervals, respectively. At the same time, one drachm of the saline ingredients of Fischer's solution dissolved in water was slowly given by mouth every two hours. This treatment was instituted at nine in the morning of the first day, and the following amounts of urine were voided: 1:00 P. M. (same day), 12 oz.; 9:20 P. M., 12 oz.; 11:30 P. M., 16 oz.; 1:40 A. M. (following day), 4 oz.; 3:40 A. M., 3 oz.; 8:30 P. M., 8 oz.

At this point the calomel was discontinued, and rubinat was given at 7:00 A. M. and at noon. The bowels began to move at 1:45 P. M., and moved five times up to



6:20 P. M.; probably there was some urine voided during that time but not in any great amount. An examination showed much albumin and casts of every description.

At this point, as the Fischer's solution was not being well borne by the stomach, and as swallowing was becoming more and more difficult, it was discontinued by mouth and given by the drop method per rectum for a period of two hours, with two-hour intervals. At midnight a considerable quantity of urine was passed involuntarily, followed by: 3:00 A. M., 8 oz.; 7:00 A. M., involuntarily; 8:30 A. M., 8 oz.

Thus, at the beginning of the third day the kidneys showed evidence of increase in their activity, otherwise the patient showed no improvement, and 1:00 P. M. found the temperature 101.4° F., by axilla, pulse 112, respirations 34, and the pulmonary edema was increasing. Adrenalin chloride, 1 to 1,000, was given in five-drop doses by mouth every two hours, and the citrated caffeine was reduced to two grains. During this twenty-four-hour period, thirty-four ounces of urine were voided, the albumin and casts were much reduced, and the fourth day showed improvement in the general symptoms. The solution was continued either by rectum or mouth, and the amount of urine increased from day to day until by the eighth day fifty-six ounces were passed, with but little albumin and few casts. Convalescence was slow, but eventually the patient was able to resume his usual duties.

Fischer's solution was used under the following circumstances in a case of typhoid fever in a male 35, a steady drinker for fifteen years, who had been under treatment for an alcoholic gastritis, and had also been threatened more than once with delirium tremens. At the end of the second week the urine became scanty, an active delirium appeared quickly followed by coma. On the thirteenth day the patient passed but eight ounces of urine, containing albumin and loaded with casts. At this point Fischer's solution was given per rectum by the drop method, being used continuously for four hours. It was then withdrawn for a period of two hours and then resumed for four hours; in this manner the solution was employed for two days.

During the first twenty-four hours the amount of urine was increased, probably about twenty ounces being passed. On the third day the patient regained consciousness and the amount of urine was forty ounces. The next day he had several attacks of syncope, due to an acute dilation of the heart superimposed upon a chronic myocarditis, from which the patient succumbed a few days later.

This solution had a most decided effect in relieving the uremic condition and the symptoms attendant upon it, and it should be of great value in treating the acute illnesses of the chronic alcoholics, especially those which run a less protracted course, as pneumonia.

The most interesting case is related by Southworth of postpartum eclampsia. The patient was a young primipara delivered of twins after four hours of active labor. There was nothing especially unusual about the delivery. There was no edema of any part of the body, and the patient gave the history of having passed urine from time to time though the amount could not be determined. The night after the birth she was attacked by eclamptic convulsions.

The convulsions became more severe and fifteen minutes apart, the patient was unconscious, unable to swallow, had much pulmonary edema, intense cyanosis, pulse 120. Southworth cut down on the median basilic vein of the left arm and removed sixteen ounces of black

blood; at this point the patient had a convulsion of terrific severity, the lips and face became black, great quantities of black fluid gushed from nose and mouth, every muscle in the body was rigid, the eyes wide open and the pupils fully dilated; suddenly all the muscles relaxed, the chin fell forward and the head back on the pillow, and to all appearances the patient was dead; however, in a few moments a very shallow respiration was resumed.

Into the already opened vein one and a half pints of Fischer's solution was given requiring some thirty minutes for its introduction; a very slight convulsion occurred just as the incision in the arm was being closed and that was the last convulsion from which she suffered, the respiration became deeper and the cyanosis was less marked. The solution was given per rectum all night, the amount of urine, which was voided involuntarily was increased; eighteen hours later the patient regained consciousness and during this time the solution was given per rectum at frequent intervals, convalescence was rapid though albumin was found in the urine in diminishing amounts for two months. More than a year has elapsed and she has no trace of albumin and seems to be perfectly well.—(*Lancet Clinic*, Vol. CXII., No. 10.)

#### New Treatment for Neuralgia.

Grasset and Rimbaud use subcutaneous injections of air or water in neuralgia. The object is to free the nerve-endings held fast in the hyperemic tissues. Surmont and Dubois make use of distilled water, Debove and Bruhl use saline (75 per cent.) or Hayem's serum:

Sodium Chloride .....	5
Sodium sulphate .....	10
Sterilized Water .....	100

The injections are given at the painful spots in a dose of from 5 to 10 c.c. repeated every two or three days. Sciatica can be cured by 10 to 15 injections.

Cordier, of Lyons, was the first to use injections of air for neuralgia, using an apparatus similar to Paquelin's cautery, in which the cautery point is replaced by a needle, the air being filtered through a tube plugged with absorbent wool. The pump of Potain's aspirator may be used in like manner. The seats of election for the injections in the case of sciatica are the upper part of the buttock, the middle and after parts of the thigh, and the outer side of the leg. After having put in the needle, it is necessary to make sure that the point is not in a vessel. Air is then pumped in very gently, and the patient should only feel some numbness and tingling. The air spreads out irregularly under the skin, makes the limb torpid, and reaches the loins and the popliteal space. From 500 to 2000 c.c. are thus injected, and the gas is absorbed in from two days to a fortnight. The method is extremely simple, harmless and painless; the patient is nearly always relieved at once. Intercostal neuralgia may be treated in the same way; femoro-cutaneous neuralgia has been relieved; while good results have been obtained in the diffuse painful neuritis, following severe injuries like contusions of the shoulder and the hip.

In obstinate cases of sciatica, Sicard advises a combination of injections of air, and of water, and epidural injections. He injects from 800 to 1200 c.c. of air at the level of the leg; from 60 to 80 c.c. of normal saline containing about ½ c.g. of novocain immediately below the sciatic notch in the upper part of the ischio-trochanteric groove; and finally, from 10 to 20 c.c. of the same solution into the lower sacro-lumbar epidural region. (*Journ. de Méd. et de Chir. prat.*, lxxxiv. 15.)

### Early Recognition of Cancer

I. Levin of New York insists on thorough examination in every case which might be cancer. Among the different varieties he offers these diagnostic points.

**Carcinoma of the Larynx.**—Hoarseness occurring in a middle-aged person and not accompanied with coughing, is a constant symptom of a beginning malignancy, and appears very early in the disease. A laryngoscopic examination will easily differentiate carcinoma from tuberculosis, syphilis, or other pathological conditions, which may cause hoarseness, and operation at the early stage of the disease gives nearly a 100 per cent. of cures. On the other hand a very slight delay may render the case inoperable.

**Carcinoma of the Stomach.**—When a person at middle age, whose stomach and bowels usually acted normally, suddenly begins to complain of loss of appetite, pressure and light pain in the gastric region, nausea accompanied with constipation interchanging with diarrhea, headache and general fatigue, the possibility of a beginning malignancy should be immediately considered, and a complete diagnostic analysis of the whole organism should be undertaken. It is not the place here to consider the comparative value of the chemical or radiographic analysis or an exploratory laparotomy. Everything should be undertaken in doubtful cases. It must be borne in mind that an abdominal incision gives no mortality, that carcinoma of the stomach give a high percentage of radical surgical cures, and that, on the other hand, when a tumor of the stomach can be felt and cachexia is present then the case is hopeless.

Many a case of carcinoma of the stomach is being treated with laxatives and gastric tonics for weeks before an attempt at diagnosis is made.

**Carcinoma of the Rectum.**—The feeling of pain and pressure in the rectum on the movement of the bowels and bleeding upon the passage of hard feces may be due to hemorrhoids as well as to a beginning carcinoma of the rectum, but to prescribe for and treat such symptoms without inspecting the anus and inserting the finger in the rectum should verge very near on criminal negligence. None the less, hardly a patient with a carcinoma of the rectum comes to the specialist without having been treated for a longer or shorter period of time by a general practitioner for hemorrhoids without an attempt at a rectal examination. Here again a timely operation gives a fair chance of complete recovery, while the usual delay caused more frequently by the family physician than the patient himself, reduces the number of radically cured cases of carcinoma of the rectum to a very small percentage.

**Carcinoma of the Uterus.**—Irregular metrorrhagia accompanied by an offensive watery vaginal discharge, occurring in middle-aged women whose menstruation either ceased or became already atypical, bleeding which occurs upon exertion or a coitus, are indications of malignancy. An early diagnosis is easily obtained at this stage and an early operation gives a very high proportion of complete recovery.

**Carcinoma of the Breast.**—Any growth in the breast in a woman of middle age is best considered and treated as a malignant condition. The investigations of Bloodgood, of Halsted's Clinic, have shown that, when tumors of the breast were operated upon at the early stage, when the diagnosis of malignancy could

not yet have been made before the operation, the percentage of radical cure was over 80, while the operations on cases with the complete clinical signs of malignancy gave only 24 per cent. of cures. The loss of a breast by a woman past child-bearing age is a very slight discomfort or disfigurement in comparison with the possibility of the development of cancer. Any benign tumor of the breast may subsequently become malignant.—(*Arch. Diagnosis*, No. 1, 1914.)

### The Prophylaxis of Cancer.

W. J. Mayo states that all vertebrate animals suffer from cancer in situations affected by their habits or conditions of life leading to local lesions in the protective mechanism. He believes that we should look upon local lesions as an invitation to cancer without regard to just what the actual cause of cancer may be. The term precancerous should be limited to those conditions which clinically and microscopically cannot be said to be surely benign or surely malignant: the character of the cells are changed; they lack differentiation, but as yet there is no infiltration of the surrounding tissue. This cellular change is found in the periphery of malignant growths and in conditions which have afterward developed malignancy. The local lesion is the invitation and the precancerous condition the probable acceptance.

He divides the sites of local irritation into three groups: (1) Congenital or acquired neoplasms, such as moles, warts, and benign tumors which may undergo malignancy; (2) trauma which strongly influences not only the development of sarcoma, but of carcinoma; (3) chronic irritation, which he considers the most important of all the precancerous conditions whether the result of mechanical, chemical, or infectious agencies. Among the many examples cited are: The development of cancer in the mouth from betel-nut irritation in India, amounting to nearly half of all the epithelial cancers of the country; the development of cancer in local lesions produced by heat, as cancer of the lip from smoking; the "Kangri" sores following burns which form more than 50 per cent. of all cancers in Kashmir; those cancers on the shins of locomotive drivers who have been exposed for years to the direct action of heat; cancers following chronic irritation due to different forms of radiant energy, x-ray, etc.; cancers following the local lesions due to infections, such as bilharzia of the bladder, treponema pallidum in keratosis linguae, nematodes in testicular tumors in horses and in gastric cancer of rats; and the "horn-core" cancer of cattle due to the irritation of the ropes through the horns with which the cattle pull their loads. If the betel nut were not used in India and the Kangri basket in Kashmir, the cancers in these two countries would be reduced one-half.

The author calls attention to the importance of applying the evidences of local chronic irritation in the production of cancer to the solution of problems as regards the development of cancers on the internal mucous surfaces of the body; for example, cancer of the gall-bladder from gall-stone irritations and cancer of the stomach following gastric ulcer. Fifty per cent. of cancers of the pelvis of the kidney are demonstrably superimposed on extensive renal calculi formation. Carcinoma of the appendix usually occurs in association with chronic obliterative processes. In the sigmoid and rectum the irritation in diverticula may have given



rise to malignant disease. Cancer of the stomach occurs in 30 per cent. of all cancers in civilized man, but is not common in primitive races or in lower animals. When cancer of a certain organ is found in only one class of individuals or one species, like betel-nut cancer and Kangri cancer, it means a single cause. Cancer of the stomach must be due to one cause, otherwise, the lower animals and primitive races would more often be affected. Something in the habits and customs of civilized man in connection with the cooking and preparation of food must be responsible for this large percentage of cancer of the stomach and a comparative investigation would be of value.

In conclusion, Mayo says: "I would again call attention to the fact that pre-existing lesions play the most important part of the known factors which surround the development of cancer; that such precancerous lesions are produced by some habit or life condition which causes chronic irritation; that where cancer in the human is frequent, a close study of the habits of civilized man as contrasted with primitive races and lower animals, where similar lesions are conspicuously rare, may be of value; and finally, that the prophylaxis of cancer depends, first, on a change in those cancer-producing habits, and second, on the early removal of all precancerous lesions and sources of chronic irritation."—(*Tr. Am. Surg. Ass.*, N. Y., April, 1914.—By *Surg., Gynec. & Obst.*)

#### Lead Poisoning.

E. M. Williams, Sioux City, Iowa, reports a case of lead poisoning with paralysis of the extra-ocular muscles. When examined he had residual signs of the disease, a partial double wrist drop and bilateral ptosis, more complete on one side, on which side also the internal rectus muscle was partially paralyzed, sufficiently to interfere with accommodation. There was also absence of basophilic degeneration and absence of lead line on his gums. The patient had been obliged to give up his business as a painter several years previously on account of his illness. The partial paralysis of the external rectus was sufficient to cause a double vision when the patient worked in a poor light. Williams has had several patients with slight or partial ocular paralysis in which double vision occurred in a dim light. He gives the history of a case to emphasize the occasional insidious onset of plumbism, particularly when the occupation and life of the patient is of such a character. In this case also there was double vision in dim light with absence of basophilic degeneration and of the lead line on the gums.—(*J. A. M. A.*, Aug. 1.)

#### Assist the Belgian Physicians.

We again direct the attention of the readers of the *MEDICAL TIMES* to the dire necessities of our colleagues in Belgium. They are sorely stricken, and it is necessary that their urgent requirements be met immediately. We solicit contributions of any amount for their assistance. Money can be sent direct to the secretary of the Committee of American Physicians, Dr. H. E. Lewis, 20 East Forty-first St., New York, or to the *MEDICAL TIMES*, and it will be forwarded.

#### Atrophic Rhinitis.

- R Red iodide of mercury.....gr. xv  
Potassium iodide.....gr. xxxiv  
Distilled water.....3iiss  
M. Sig.: Poison; use only in spray; do not swallow.

#### A Correction.

To the Editor of the *MEDICAL TIMES*:

Please allow me to correct an error in my article entitled, "An Examination of Death Rates for Cancer and for Chronic Nephritis," which appeared in your December, 1914 number. In the table on page 365, second column, the deaths from pneumonia—all forms—include bronchopneumonia for all the years given—1901 and 1909 to 1912—except the last named year, and from this one the total deaths, when those from bronchopneumonia are included, numbered not 51,495 as printed, but 79,917. I am to blame for this error, but I am only partially culpable, for in the table on page 17 of U. S. Mortality Statistics for 1912 deaths from pneumonia are given as 51,495, and no mention is made of bronchopneumonia in that table. I probably omitted to consult the International Classification of Diseases to ascertain whether the term pneumonia includes bronchopneumonia, or whether the latter is placed under a separate number. I now find that it is so placed in the classification for 1910, the latest in my possession. As pneumonia—all forms—includes deaths registered as primarily due to "pneumonia" without qualification, and as some of the deaths registered in this manner are no doubt the result of bronchopneumonia, all deaths attributable to the last-named cause should, in my opinion, be included in the total deaths from all forms of pneumonia.

For the year 1912, then, total deaths from all forms of pneumonia in the registered area were 79,917. The erroneous figures printed on p. 365 of your December issue, 51,495, are the deaths from all forms of pneumonia except bronchopneumonia. I greatly regret this error.

LAWRENCE IRWELL.

Buffalo, N. Y.

#### Prevention of Conception vs. Abortion.

To the Editor of the *MEDICAL TIMES*:

Sir:—I read with interest your editorial, "The Proposed Legalization of Abortion," in the current issue of the *MEDICAL TIMES*. While opinions may differ as to the advisability of legalizing abortion, or of making its punishment less Draconian than it is now, there is no question whatever that abortion is a much more brutal, much more dangerous, much more serious procedure than is the prevention of conception. Should teaching of the people the use of the proper means of preventing conception become legalized, then the necessity for abortion would either become nil or be reduced to a minimum.

And the writer, who with all due modesty ventures to claim that he was the first medical man in this country to advocate the prevention of conception as an important eugenic, social and economic measure, is happy to note that his propaganda is bearing fruit, and that numerous medical journals which but a few years ago were horrified at my doctrines are now beginning to accept them, and even to advocate them in a gentle, diplomatic manner.

And the writer feels more justified than ever in expressing the hope that the time is not far distant when the prevention of undesirable pregnancies will be as legal, as proper and as respectable as is the prevention of typhoid fever or pneumonia. An undesirable pregnancy may prove a greater calamity than an attack of typhoid.

WILLIAM J. ROBINSON, M. D.

12 Mt. Morris Park, West, New York.



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## War, Immigration and Insanity.

The population of our asylums grew at twice the rate of the general population between 1904 and 1910. In 1904 one in every 543 was confined in a hospital for the insane. In 1910 one in every 490 was in institutional custody.

Experts like Dr. Joseph A. Hill, who made up the Government report from which we have quoted, think that there has been an actual increase in the prevalence of insanity, not of course to the degree indicated by the figures given, as alarmists would have us infer, but to a moderate extent. Allowance must be made for earlier and better diagnosis, the passing away of much of the prejudice against institutional care, together with the dying out of the old idea that somehow insanity is a disgraceful condition, for the great growth in the number of institutions which now care for cases formerly neglected, and for the heavy importations, in the past, from foreign countries, of potential lunatics. Between 1904 and 1910 the number of institutions for the insane increased from 328 to 366, and the average number of inmates from 458 to 512.

But making all allowances, the increase in insanity is great enough to give us some concern and to lead to a discussion of ways and means of preventing further increase. If we are going crazy at a rate faster than the nation is growing, and if that ratio be continued, then even if the increase is very moderate, the outlook is dismal enough.

We think that something definite can be done to reverse the ratio. We can largely eliminate what might be called artificial augmentations.

As a consequence of the war, many potential lunatics are not being admitted to our country at the present

time. If the war continues long we may expect the increase in institutional insanity not to outstrip the increase in general population during the next five years, say. But when the war ends we shall have an influx of physically deteriorated men, drawn from among the survivors of the great conflict and from the non-combatants who are suffering as much from privations as the soldiers are from shot and shell and disease. These immigrant groups will undoubtedly present a larger proportion of syphilitic infections than any heretofore passed upon, not to mention other deteriorations.

Now we know perfectly well the part played by syphilitic foreigners in swelling the populations of our insane hospitals. There is no need to dwell upon the notorious facts.

If we do nothing during the war more than is now being done, there will, as we have said, be a paralleling of institutional and general population increases. But we must do better than that. We want our general population to increase very much faster than our institutional population. In fact we don't want our institutional population to increase at all, but to markedly decrease. How can we bring that about? Simply by taking advantage of the 75 per cent. drop in immigration to institute Wassermann tests upon every immigrant who comes to our gates, and to prepare for a continuance of the custom after the war is over and the influx of foreigners waxes large again.

Why in the name of civic decency should anyone with a positive Wassermann be allowed to enter the country? Who, in the light of our present knowledge and social enlightenment, dares to wheeze that the institution of the Wassermann procedure as proposed is, for some political, or economic, or other reason, not feasible? Is it more feasible to entertain as guests of the State of New York the foreigners who make up about 40 per cent. of the population of our State Hospitals?

## Respectfully Referred to the Ophthalmologists.

In connection with the rapidly increasing interest in the study of internal secretions, it is to be expected that many new diagnostic criteria will be worked out. It seems to us, theoretically, that something may be inferred as to future discoveries, and lines of practical research laid out, by a sort of inversion of some of the old, familiar signs. For example, in hyperthyroidism, or at least in well-developed Graves' disease, we have certain ocular signs, the better known of which are Abadie's, Stellwag's, Dalrymple's and Graefe's. Is it not to be presumed that hypothyroidism gives rise to ocular signs of inverse character? We leave it to the eye men to postulate exactly what the ocular signs of hypothyroidism ought to be, or to point out any fallacy in our reasoning. It may be that there are already in the literature reports covering exactly the points herewith brought forward for consideration.

## The Internal Use of Tuberculin.

We once proposed in these columns the internal use of tuberculin in children, and have been gratified to know that our suggestion did not fall altogether upon deaf ears. The advantages of such a method in children ought, we think, to be obvious. Yet for all classes of patients it possesses marked advantages. But first let us say, parenthetically, that Solis-Cohen and certain foreign clinicians have thoroughly established the sureness of physiological action of tuberculin used in this manner. Contrary to what might be supposed theoretically, the action of the remedy seems quite de-

pendable and uniform when taken by the mouth. As to its advantages, it would seem that its general adoption would enable the profession to carry on a more successful warfare against tuberculosis on a large scale. The needle is eliminated. By small double daily doses more is gotten in in a week than by the weekly method. One gets a quantity in in a week which, given at once, would wreck the patient. And we must bear in mind that arrested cases are the result of continuous auto-inoculation. That is the way Nature does things. Nature does not give her doses weekly!

If there were any doubt about the physiological action of the remedy given in this way very little could be said, but since this is not the case we wish to enter a plea for the more general use of tuberculin internally by general practitioners. Nothing like the expertness is required for the application of this method that the weekly hypodermatic injection calls for. It does away to a very great extent with expert "jockeying" to determine safe dosage for single injections. It is admirably, indeed ideally adapted for general use.

#### Drugs and Decadence.

The *New York Medical Journal* seems to agree with Dr. Wilburt that the enormous and increasing use of patent medicines may partially account for the increase in deaths from degenerative diseases. So much attention has been bestowed upon addiction to narcotics that we have rather forgotten the excessive use of drugs of general character, as for example the analgesics and hypnotics. Five hundred million dollars a year are expended for drugs of this sort, and it is said that this abnormal phenomenon is of only recent development. Of course, the use of patent medicines is an ancient practice, and we used to think not so many years ago that the drug habit was a large-sized proposition, but what is surprising in Dr. Wilburt's report is the statement that between 1880 and 1910 the increase in population was a little more than 83 per cent., while the increase in the amount spent for drugs of the character described exceeded 740 per cent.!

While such a deplorable use of drugs must be a factor in inaugurating degenerative diseases, we are inclined to think that the real significance of the drug craze has been missed both by Dr. Wilburt and the *New York Medical Journal*. It is our own view that this drug inebriety is more the result than the cause of physical, moral and mental decadence. A healthy stock would not have inordinate drug craving. The fact is that there is increasing degeneration due to the conditions of modern civilization. The people vainly endeavor to assuage the symptoms of their degeneracy. It is for definite aches and pains, fatigues and depressions, that they fly to seductive palliatives. While the drugs that they take undoubtedly demoralize them further, they are taken in the first instance because of already operative pathology. As a matter of fact, we know that the degenerative diseases are setting in earlier, and we know that there are adequate factors other than drugs. Why should not our people be drug and alcohol users, with their neuroses, and intoxications, and general decadence resulting largely from conditions over which they have but little control? They live insanely, to be sure, and are completely at the mercy of the competitive Moloch. There is no way of escaping from their plight. What wonder that they crave the anesthesia of alcohol, the stimulus of coffee, the analgesia of acetanilide, the hypnosis of trional, the sedation of nicotine. What wonder that they stand agape at forceful men and are ready to fall

down and worship when commanded by healthy demagogues, vigorous clerics and real leaders in industry.

#### The Contagious Hospital as a Factor in the Improvement of Property Values.

Our title may sound paradoxical to those of the old schooling regarding contagion and infection, but we think the time has come when an intelligent discussion of the subject may be had without reference to the old superstitions. Both municipalities and real estate operating companies are losing time and money through their adherence to obsolete traditions, and the public is suffering much unnecessary anguish by reason of its stupid prejudices.

It has long been noted, empirically, that those sections of a city contiguous to a contagious hospital show fewer examples of contagious disease than do other sections. Gradually, it has even been discovered that the girls of a district taking service in a contagious hospital situated therein do not contract disease very often, although contact may be rather close, a fact which has gone far to enlighten certain of the poorer and more "ignorant" population. In 1913, 33 employees of the New York City Health Department working in its hospitals were infected, representing 3.5 per cent. of the total number (856) so employed. There were no deaths. These figures include doctors, nurses and domestics. It is doubtful if contagious morbidity among the domestics concerned would have been much less had they been employed elsewhere.

We suppose the formulation of an hypothesis accounting for the apparent scarcity of contagious diseases in the territories adjacent to contagious hospitals will be thought far-fetched, but we venture to suggest that the germs which reach residents of such districts are too few in number to infect, but not too few to set up artificial immunity. While the fomites theory has been virtually abandoned, and some cities are giving up disinfection, it is our belief that living germs are transported and do reach people in and out of institutions to some degree, despite modern hospital methods, but we see in this fact a salutary rather than a sinister implication.

There may be esthetic objections to living near a hospital of any kind, but we fancy that if the Department of Health were to take the trouble actually to demonstrate that salubrity were best sought near a contagious hospital Mr. Newlywed and Mrs. Honeymoon, who have paid two hundred dollars down on their houses (balance of \$8,000 remaining on mortgage), would not be so vociferous in their opposition. We even fancy that the real estate operators would find in such pronouncements on the part of the Health Department a fair aid in their business. Lastly, the city itself, before the Health Department reveals the truth in this matter, ought to buy at present low prices the unoccupied lands adjoining contagious hospitals, either for the parking or building purposes of the hospitals. Present prejudices will have died out in a very few years if the Health Department disseminates the truth.

Knowles says one-sixth of the cases of eczema are occupational in origin.

#### Endometritis.

Ichthyolis .....	3j
Tinct. Iodi .....	f. 5iij
Glycerit. Hydrastis .....	f. 3v
Glycerit. Boroglycerini .....	3vjss
M. Sig.: Apply on tampons.	

—CANDLER.



## Miscellany

CONDUCTED BY ARTHUR C. JACOBSON, M. D.

### Biographic Extract.

From "Who's Who in Medicine—A. D. 1935."

Theophilus Wise.—Born Horse's Neck, Nevada, 1890; A. B., University of Butte; M. A., Cape Cod College; D. Sc., Paterson University and Oklahoma College; LL. D., Canarsie College, University of Labrador, and Zion College (Zion City, Illinois). Professor, New York Night Medical School and Manhattan Post-Graduate School for Defective Practitioners. Director of the Metropolitan Institute for the Study of Incurable Diseases; attending physician Home for Aged Babies; attending gynecologist Old Men's Home. Commander of the Imperial Eunuchs (order conferred by the ruler of Corea for services rendered a member of the royal family); corresponding member of the Imperial Institute of Science, Afghanistan; ex-Surgeon-General Siamese Navy. Organizer of the Departments of Prophylactic Venereal Education of the Chorus Girls' Union, the Commercial Travelers' League and the Bartenders' Guild. Principal contributions to surgery: Direct Drainage of the Renal Pelves as a Preliminary to the Repair of Ureteral, Vesico-Vaginal and Urethral Lesions, and Aspiration of the Right Heart in Pneumonia. Principal contribution to medicine: Direct Hypodermic Therapy of the Cardiac Muscle. Other important contributions: Axial Torsion of the Lung and its Clinical Similarity to Phthisis Pulmonalis; What Shall We Do With the Cretinoid Type of Medical Practitioner (an address, Sag Harbor Academy of Medicine); Diagnostic Jiu-Jitsu; Vaginal Vagaries; How to Get the Ovaries Every Time; Twenty Years in the Vagina; Fetuses That Pass in the Night (a poem); The Common Bedbug the Intermediate Host of the Gonococcus; The Utilization of the Principle of Vacuum-Cleaning in the Curative Treatment of Specific Urethritis; Silver Shreds Among the Gold and Other Diagnostic Criteria; Definition of the Legitimate Field of the Author's Anti-Pregnancy Serum; The Psychiatry of the Book of Revelation; A Study of the Phobias, with Especial Reference to the Fear of Money. Editor of *The Chancre*, a Journal of Syphilization. Politics: Independent Progressive. Club: Ananias. Recreation: religion; also drives a Woolworth five.

### "Some" Eugenics in the Apocrypha of the Old Testament.

Desire not a multitude of unprofitable children, neither delight in ungodly sons.

If they multiply, delight not in them, except the fear of the Lord be with them.

Trust not thou in their life, neither rely on their condition: for one is better than a thousand; and to die childless than to have ungodly children.

For from one that hath understanding shall a city be peopled; but a race of wicked men shall be made desolate.

Many such things have I seen with mine eyes; and mine ear hath heard mightier things than these.

Jesus, son of Rirach, in *Ecclesiasticus*.—XVI. 1.

### A Fable.

Once upon a time there was a county medical society whose headquarters were in a large building, which the society owned. A large medical library

was housed in this building. This library was the property of the medical society. It had been made a public library, in order to secure remission of certain taxes by reason of its status as an educational institution open to the people.

Now it came to pass that the society caused an album to be made containing the photographs of all the members. This album was placed upon the walls of the library, its large leaves swinging out to facilitate inspection of said pictures.

This album served various useful purposes. It enabled members to behold the visages of other members whom they might not personally know, and it furnished valuable illustrations for obituaries and for historical works.

It also served the press a very useful purpose, for since the library was a public one, the pictures were public records, and were accessible for reproduction by newspaper artists.

Moral: Circumstances are sometimes such that the best meaning men are powerless to prevent their own exploitation in the lay press.

### No Man a Hero to the Psychanalyst.

Alas, how the delvers in psychopathology are destroying our idols! So many apparently noble human motives are being shown by such workers as Freud and Havelock Ellis to be founded upon sexual aberrations, for example. Until Walt Whitman's nursing of the soldiers in the Civil War was revealed to us as merely a phase of his homosexuality, we thought it a most beautiful example of human service. But then we saw John Addington Symonds' book on homosexuality—a copy which had belonged to James Huneker, and bearing many notes in his handwriting elucidating the text—and the significance of some of the Whitman poems of that period was borne in upon us. Thus fall our idols. With all this Freudian flub-dub buzzing in our ears nowadays we shall expect to see some of our most cherished heroes and heroines indicted. We have already been told that the achievements of some of the great depend upon the "sublimation" of gross sexual instincts and desires. We shall yet be told, presumably, that certain kinds and degrees of achievement denote certain specific things connotative of the unspeakable. It is very unsafe in these days to be other than mediocre and respectable. If you are a woman, and are possessed of powers of leadership and organization with respect to other women, beware lest you be classed by the new school of morbidities as a presumptive homosexual—if nothing worse. And it seems there are many people who are homosexuals and don't know it, hence impotence in marriage, etc., etc. Really this Freudian business is finding us to be in a dreadful mess.

### Our Careful Conservation of the Slum and of Slum-born Disease and Decadence.

There seems to be a trend toward paternalism and charity abuse all along the line, and academic discussion will not alter the inevitable outcome. Of course the attitude of our older American stock toward these things was distinctly different. Once there was a time when nothing whatever savoring of pauperization could have been offered to any one. People faced the discipline of life and expected to struggle and make sacrifices. The character that they developed in this hard way was the real foundation of the Republic. But to-day we have to help the people who are crushed beneath the social Juggernaut, else they would be dying in the gut-

ters; we are making things so easy for the derelict that he tends to multiply. To-day unfortunate people make no bones about receiving alms; they expect direct aid from the State and do not philosophize about it. Their attitude toward life is a helpless one. The agitators that this class produces are caricatures of a human dynamo like Rousseau. There will never be anything like the revolution which some fools predict in this country, because the once dangerous masses are soothed, cajoled, flattered, and if need be, fed, by a thousand agents of the conservative forces of society. The terrible monster is diseased, and lives precariously, and is deftly cheated of the best joys of life, but cannot withstand our candy sticks. We have indeed learned how to avert revolutions. We know how to foster the slum, debauch human souls and bodies by wholesale, and pay no penalty therefor save the private charity tax, and this does not bear too heavily upon our precious shoulders. The poor have learned how to accept charity but have forgotten how to demand justice.

#### Are Our Clinical Refinements Aiding or Hampering Diagnosis?

What might be called clinical refinements are so numerous that it is a question whether diagnosis is not hampered. The trees are so thick that one cannot see the forest. We used to get dulness on percussion and ascribe it to the pulmonary lesion. Now we are told that the dulness is due to muscle spasm over the affected area, making the tissues more dense. Now everybody is listening over the acromion for apical signs instead of over the apex itself. We are told that mottling of the lung, as shown by the x-ray, is the earliest physical sign, and that this occurs in the neighborhood of the hilum long before so-called incipient disease makes its appearance at the apex. A great many good men are "up in the air" in these matters and feel almost incompetent in the face of the increasing refinements, which sometimes leads to a neglect of old and well established methods. Everybody is tinkering with week-old devices. These remarks apply in kind to other fields of diagnosis. To our mind there is a deal of what engineers call lost motion. It is getting increasingly harder to keep one's perspective reasonably correct.

#### Defectiveness Not Essentially Hereditary.

We doubt if anyone will controvert the statement that defectives are more common among the children of the poor than among the children of the rich or well to do, just as the death-rate is higher among the poor children. The difference is due to the disparity in skilled care, for even though a mother who is rich may be unskilled, she can provide skilled care. The poor woman who is unskilled in the care of children and who has to perform a multitude of duties besides can neither give nor provide what the children need; hence the high death-rate and hence the defectives.

Now one gathers the impression from current literature that defectiveness is largely a matter of essential heredity, but if it were truly that we fail to see why the children of the prosperous are not more often affected.

It is our belief that defectiveness must be thought of in a group sense. Prosperity is apt to run through successive generations; in other words we have prosperous *classes*, which must be thought of as more or less self-perpetuating. A far more marked tendency is seen in the case of poverty; that is a matter of class in a much more intense way than is prosperity.

Our point is that defectiveness is largely a group product, "hereditary" in proportion to the number of generations that have lived under brutalizing conditions, and therefore most frequently encountered among children representing the last of long lines of exploited ancestors. If this view be true, then it should be found that defectiveness occurs among the prosperous less frequently as successive generations appear maintaining their prosperity continuously. Among those who have not been long lifted above the dead line defectiveness should be found relatively often.

What is miscalled heredity is oftentimes a kind of artificial curse resulting, not from any inherent operation of nature, but from man's own inhumanity to man. Of course we are speaking now of the relationship of so-called heredity to defectiveness and not of actual heredity, manifesting itself according to well known Mendelian principles—absolute, inexorable heredity.

In so far as the economic conditions under which the masses live improve, in so far will defectiveness evidence itself less and less. The scapegoat heredity will then be given a much deserved rest. One of our most convenient doctrines will then have gone far along the way of the many other discarded pegs upon which we once draped our social sins—with all the other stage properties once essential in the social burlesque conducted for the amusement of the gods.

We don't say that prosperity is hereditary, and we don't say that poverty is, just because we find them continuing in various generations. To say that they tend to self-perpetuation is not to say that they are hereditary. In our humble opinion it is absurd to claim that defectiveness is *essentially* hereditary.

It seems a great pity that Dr. Max Schlapp cannot get from the Board of Estimate all the funds that he needs for a thorough study of defectiveness. He is open-minded on the subject and believes that when we understand it better we shall be able to do much in the way of prevention and cure. His work at Cornell and for the Charities Department promises to be epoch-making if it can be properly financed. We should like nothing better than a scientific demonstration of just how defectiveness comes about and the relation of our social and economic crimes to it, just as the experiment of the Association for Improving the Condition of the Poor at the Home Hospital has demonstrated that it is futile to treat tuberculosis unless the underlying cause is also treated, namely, poverty.

The fair-skinned, healthy, handsome, athletics-loving sons of the best English gentry constitute probably the most notable physical object lesson that could be instanced of what many generations of economically decent living bring about. And the same country furnishes the most horrid instances of the converse, as witnessed in the great slum districts, where we find the repellent end-products of long lines of degraded ancestry, or in the great factory centers, where, in addition to the turning out of industrial products, is also seen the manufacture of human defectives out of what was once the English yeomanry. The latter are mere upstarts, climbers, parvenus in poverty's ancient realm; the peers of that realm, in all their dreadful panoply, must be looked for in the descendants of the ancient lineage of Whitechapel.

Why create defectives and then sterilize them? Isn't there something defective about the individuals who are willing to meet social problems in such a manner?



## Syphilis

### THE PRESENT STAGE IN THE TREATMENT OF SYPHILIS.

Charles M. Williams of New York gives an enlightening resume of syphilitic treatment. The old doctrine that treatment should not be begun until the diagnosis is firmly established is losing much of its force, in view of the advance in knowledge. We no longer wait for the appearance of the secondary eruption on the skin or mucous membranes, as the *Spirochaeta pallida* may usually be discovered easily in the secretions from the chancre; and its presence is pathognomonic. But there are still some early cases in which we are in doubt: the history of the development of a lesion at a reasonable interval after exposure and the clinical picture may be suspicious, while the microscopical findings are doubtful; at so early a period the Wassermann reaction is usually negative. Under these circumstances, is it better to wait till the organisms are discovered, or to begin treatment at once. The latter appears to be the wiser course. By a series of Wassermann tests, especially if a provocative injection of salvarsan is given, it is possible to arrive at a reasonable assurance that the disease is extinguished, even within the first year. Even the few days saved by beginning treatment at once, rather than waiting till the spirochete are discovered, in case the first search is fruitless, may be of vital importance, for we realize now as never before how early the invading organisms may reach the central nervous system, and how difficult the attack upon them becomes, once they have advanced so far. It is the permanent and progressive injury to the nervous and the vascular systems that make the disease the scourge it is in its later stages, and both are often attacked from the earliest period. It is no longer necessary to use salvarsan alone on the plea that only by so doing can we test its efficacy. Its efficacy is already tested; it works wonders, clinically lesions long resistant to mercury disappearing under its use as snow before the sun, but only after repeated use, and not always then, can we expect the Wassermann reaction to become and to remain negative, and so long as the Wassermann reaction is positive we cannot claim a cure. The results of the use of mercury and salvarsan together are better, and up to the present time this is the best method known. The way in which mercury is given is very important. Injection is probably the best method, though inunction is very efficacious also. It is best to begin with an intramuscular injection of one grain of the salicylate of mercury in liquid abole, and to follow this in a day or two with an intravenous injection of salvarsan or of neosalvarsan, 0.2 g. or 0.3 g. respectively for a man, 0.15 g. or 0.2 g. for a woman. The object in giving the mercury first is to prevent the reaction which is so common after the first injection of salvarsan, and which is probably due to endotoxins arising from spirochaetae killed by that drug. The action of mercury is much slower, and apparently gives the system time to destroy these poisons without any appreciable reaction. The object in making the first dose of salvarsan so small is to test the reaction of the patient, and so to avoid the danger of injury to the nervous system by the drug itself. If these initial doses are well borne, as will be the case with practically all patients, both drugs should be given again in four or five days, the salvarsan this time in larger dosage, say 0.3 g. for a man; and then salvarsan is to be given at ten-day intervals, in doses of 0.4-0.6 g. each, for four

more injections. The mercury, meantime, is to be continued in full doses. The patient should be warned to take a mild cathartic the night before the injection of salvarsan, to eat very sparingly that day, and to keep quiet for about eighteen hours after. With those precautions ambulatory treatment is safe, and is now the rule rather than the exception. It should in any case be followed by a period of rest from all specific treatment lasting four to six weeks, during which the patient's general condition should receive careful attention. The Wassermann reaction should be tested at the end of this time and if found to be positive the whole course should be repeated; if negative, the second course may be made considerably shorter, but both mercury and salvarsan should still be used. The subsequent treatment will depend on the results of the Wassermann tests, and on the occurrence or non-occurrence of clinical symptoms. So long as there are any signs of the disease, whether clinical or shown by laboratory findings, treatment by courses of mercury and salvarsan should be continued and no patient should be considered cured until he has shown a negative Wassermann reaction for at least a year after the last course of treatment, and after a provocative injection of salvarsan.

When salvarsan was first used, there were many reports of severe affections of the cranial nerves, often with severe headache and fever. These symptoms were, by many, thought to be due to the action of salvarsan itself on the nerve tissues. They seldom or never occur when treatment is begun with small doses, especially when accompanied or preceded by mercury, and what is even more significant, the symptoms yield to further treatment with mercury and salvarsan; these are due to the disease process itself, aggravated by the setting free of toxins by the destruction of the spirochaetae. Their great importance lies in the fact that they show that the nervous system is already involved, and they demand, therefore, the most thorough and painstaking treatment. The doses, however, should be small, as large doses are apt to aggravate the symptoms, at least for a time. It is in these cases, in the early stages of the disease, that lumbar puncture and the examination of the spinal fluid are of such great diagnostic value, and it is probable also that they would be greatly benefited by the intraspinal injection of salvarsanized serum.

Paresis and locomotor ataxia are now proved to be manifestations of syphilis, but treatment by ordinary methods has been unavailing. Large doses of salvarsan, intravenously combined with mercury or not, have only a slight and temporary effect on the course of these diseases, and on the pathological changes in the spinal fluid which accompany them. It was to meet this condition that Swift and Ellis evolved the treatment by the intraspinal injection of salvarsanized serum which is at present the most promising method we have.

Potassium iodide still has its place in the treatment of syphilis, especially in the latter stages. Its use is now advised also in the earlier stages, with the object of increasing elimination, and of making the spirochaetae more accessible to the active parasiticide drugs. It is now easy, ordinarily, to remove rapidly the clinical symptoms of syphilis, but to assure a permanently negative Wassermann reaction is, in many cases, difficult.

Salvarsan is a powerful drug, and it should be used with caution, especially in diseases of the kidneys, the central nervous system, and the smaller blood-vessels; but with careful technique and the use of small doses at the start, and with sufficient intervals between the

doses, the number of accidents is growing progressively less.

To sum up: Every case of syphilis, and especially in the early stages when the chance of complete recovery is best, should be treated with both salvarsan and mercury, unless there is some special contra-indication to one drug or the other, and treatment should be continued in courses of four to seven weeks, with intervals about six weeks, until all symptoms have disappeared and the Wassermann reaction is negative.—(*Med. Rec.*, Sept. 12, 1914.)

#### The Treatment of Nervous Syphilis by Mercury and Neosalvarsan.

Stephenson reports a series of cases of cerebrospinal syphilis treated not by the intraspinal method, but by the intravenous use of neosalvarsan, and mercury by inunction. It is interesting to note that this method of treatment resulted in a diminution in the number of lymphocytes in the cerebrospinal fluid. It also diminished the quantity of globulin and induced a negative Wassermann reaction, whereas the reaction had previously been positive. Furthermore, arsenic was found in the spinal fluid, which is interesting in view of the fact that it has been generally supposed that salvarsan fails to benefit cerebrospinal syphilis when it is given intravenously because it will not pass through the secreting cells by which the cerebrospinal fluid is formed. It will be a matter of interest to follow further research along this line. Stephenson's results seem to be almost as favorable as some of those which have been obtained by the intraspinal injection of salvarsanized blood serum. Before statistics concerning these cases can become of great value some means must be devised by which cases can be graded. To compare a given number of grave cases with a given number of mild ones does not give us accurate results.—(*The Therapeutic Gazette*, October 15, 1914.)

#### Lumbar Puncture in Syphilis.

According to B. C. Corbus, Chicago, lumbar puncture with spinal-fluid examination is demanded in all cases of syphilis, no matter what the stage of the disease, as a control on future complications of the nervous system. Since October, 1913, he has employed this method with spinal-fluid examinations on as many patients "biologically cured" as he could induce to consent to it and he tabulates the results. Brief protocols of several of the cases are given. The following are his conclusions: "1. Too little attention is still paid to the diagnosis of syphilis at the time of the presence of the primary lesion. 2. A great majority of physicians fail to realize the golden opportunity that an early diagnosis presents. 3. Control of the treatment by the biologic examination of the blood-serum must be supplemented by spinal-fluid examinations. 4. Intensive intravenous injections should always be tried first in early cases, before intraspinal injections are resorted to. 5. Based on clinical observation, there is a strong possibility of a specific spirochete for the nervous system."—(*J. A. M. A.*, Aug. 15.)

#### Infantile Albuminuria.

Strontii Lactatis.....	5iv
Syr. Aurantii Amari.....	f. 3j
Aquæ Destillatæ.....	f. 3iij

M. Sig.: A dessertspoonful morning and night.

—COMBY.

Popular syphiloderm is sometimes diagnosed as lichen-planus—a grave error.

## Genito-Urinary Surgery

### Gonorrheal Stricture.

The general practitioner does not seem to realize the formidableness of a pathological narrowing of the urethra canal. He fails to have a just appreciation of the long train of secondary pathological phenomena which can develop as a result of the urinary hindrance. Even many genito-urinary specialists have a very defective grasp of this condition. The man who has done considerable pathological work and seen the enormous atonic bladders, the dilated ureters, and the pyonephrotic kidneys directly due to a stricture of the urethra is the man who will best appreciate the danger of neglected stricture. Inspection of a dilated false passage through an aéro-urethroscope affords mute evidence of the danger attending rough, unskilled instrumentation. The idea that the treatment of stricture is inevitably painful is not held by those who know their anatomy and who introduce instruments with gentleness and skill. Pain upon instrumentation is a token of lack of skill.

Another point clouded with doubt is the multiplicity of stricutured points. In the average case an extremely gross and inaccurate diagnosis is made and only the tightest stricture is detected. In so far as treatment is concerned there may not be any practical worth attached to this point, for, of necessity, proper and complete treatment of the tightest stricture will also accomplish cure of its companions of wider caliber. A feature regarding multiple stricture that is not generally known and but rarely mentioned is, that in multiple stricture the one nearest the bladder is invariably the tightest. The pathological reason for this is quite obvious, the hydrostatic pressure exerted by the urinary stream favoring the inflammatory process which precedes the formation of fibrous tissue.

The popularly held belief not only among the laity, but also among a large part of the profession, that most strictures directly follow the use of caustic injections may be dismissed as a fallacy, although, of course, an irritating injection could favor a stricture either by destruction of the mucosa at a given point, or by hindering the *restitutio ad integrum* of an already denuded area. But for all practical purposes we may say that strictures are an end result of a long persistent gonorrhea.

The dangerous sequels of stricture which are entirely possible, in fact, quite inevitable, point to the wisdom of early treatment by dilatation. Unless an emergency be present not one stricture in fifty need be cut. Careful dilatation will accomplish all that the more radical operation can, and it does not carry with even the small mortality that the cutting operation is accompanied by.—(*Urol. and Cut. Rev.*, April, 1914.)

### The Significance of Frequency and Tenesmus in Acute Cystitis.

O. Heath presents a case of acute cystitis of one month's duration (*B. M. J.*, 1914, ii, 1430), treated by an autogenous vaccine in 7 days' time, followed by an absolute and permanent cure, without the use of urinary antiseptics or mechanical washings of the bladder.

The patient, a medical man, had acquired gonorrhœa, the discharge under the microscope showing a mixed infection consisting of gonococcus, staphylococcus



albus, and a gram-positive bacillus of the xerosis, or pseudodiphtheria type. There was no treatment other than care as to cleanliness, and the discharge disappeared in about three weeks. During the next two months, there were two or three recurrences of a gleet discharge, which cleared up; at the end of that time, the patient noticed he could not hold his urine for longer than two hours in the day, and had to get up once or twice during the night to micturate. This condition of great discomfort was allowed to continue for a month, when the author was consulted with a view to having a vaccine made.

Examination of the urine showed a moderate amount of pus with numerous vesical cells, and both the stained films and the cultivations made from the centrifugized pus showed staphylococci and bacilli of the xerosis type, but no gonococci.

In the treatment of acute cystitis following a mixed infection, the author emphasizes three important points: (1) That the gonococci disappear in the majority of cases, and the infection being kept up by the other bacteria which had been present in the original discharge and that marked symptoms of frequent micturition and tenesmus after the act, are indications of a strong and healthy reaction to the bacteria; (2) that frequency and tenesmus are part and parcel of the process of cure, and should never be treated symptomatically; (3) that tenesmus can be almost entirely, and frequency partly, controlled by the amount of water taken by the patient.

Active treatment was commenced by the subcutaneous inoculation of 50 million staphylococci and 25 million bacilli, and 24 hours later, drink was withheld for five hours to raise the bacteriotropic power of the blood, and with a view to increasing the frequency and producing tenesmus. This procedure was repeated at 48 and at 72 hours after the inoculation, as much water as was required to relieve the symptoms being allowed between times; on the fourth day, a second dose of vaccine of 100 million staphylococci and 50 million bacilli was given, and 48 hours later drink was withheld for four to five hours, for the reasons noted above. The symptoms after the second inoculation gradually improved from day to day, and on the eighth day the symptoms had apparently disappeared altogether.

A third dose, of 150 million staphylococci and 75 million bacilli, was inoculated on the evening of the eighth day in order to make assurance doubly sure. From that day, now over three years ago, there has been no recurrence nor any sign of trouble, and the urine examined on that day was found to be free from pus and bacteria, and has been normal ever since.—(*Surg., Gyn. and Obst.*, Vol. xviii, No 4.)

#### The Pathologic Rôle of the Prostate.

H. H. Young, Baltimore, points out the etiologic importance of the rôle of the prostate and seminal vesicles in general toxemias. The symptoms are often so remote and disconnected that these organs are not suspected. He has seen many cases of lumbago, sciatica and vague pains in many other localities caused by chronic inflammations of the prostate and seminal vesicles, involving nerve terminals and causing referred pains according to the dicta laid down by Head in his explanation of the latter. He therefore emphasizes the importance in examining the prostate in many painful conditions anywhere between the diaphragm and the toes when there are no local symptoms directing at-

tention to the prostate itself, and it is to the symptoms resulting from the absorption of toxins and bacteria from the organ to which he especially desires to call attention. Little is found in literature regarding these remote infections, and he refers to Fuller's recent article as one bearing on the subject, in which he recommends his operations of vesiculotomy in cases of toxic rheumatism, etc.

Young describes an operation of his own which, in its first portion, is practically that of perineal prostatectomy. Instead, however, of incising the membranous urethra, he brings the prostate and seminal vesicles into view and performs whatever operation is needed. The importance of pus tubes in the male, as shown by Belfield, suggests the desirability of sometimes opening wide the ampullae of the vasa deferentia after the covering fascia is turned to one side by incisions, and more satisfactory drainage can thus be obtained than by operating elsewhere. Young says, in conclusion, that these chronic inflammations of the prostate and vesicles last often for years with very few local symptoms, and are the insidious cause of remote processes and chronic pains in various parts of the body; hence the importance of rectal examinations as a routine procedure. The enforcement of these in the medical department of Johns Hopkins has cleared up many obscure cases and led to their cure.—*J. A. M. A.*, Sept. 13.)

#### The Prostate and Diabetes.

Heinrich Stern of New York believes that prostatic disease and diabetes may be associated as follows:

First—Prostatic disease of infectious origin may antedate the diabetic state.

Second—Senile hypertrophic changes in the prostate may exist prior to the outbreak of diabetic phenomena.

Third—Prostatic disease may be the result of the diabetic urine.

Fourth—The prostatic state may be the consequence of the self-same causes which give occasion to the diabetic deterioration or it may be a direct result of the latter.

The first and second eventualities have an actual interest only to the extent that the supervening diabetic condition interferes with an improvement of the prostatic affection of microbic causation and tends to accentuate the untoward prostatic phenomena in the aged. In both eventualities prostatic affection and diabetes show no relationship as far as the origin of one from the other or their production by one common factor is concerned.

The third eventuality, the causation of prostatic disease through the agency of the sugar-containing urine, be it on account of the activity of yeast and fungi rapidly developing in it or on account of the immediate operation on the glucose, represents more than a mere accidental occurrence. Chronic prostatitis prevails frequently in the diabetic, but as the affection does not always manifest itself by pronounced symptoms its existence is either overlooked or disregarded as a general rule. Again, an abnormal condition of the prostate, though not infrequently associated with involvement of the seminal vesicles, is very often overshadowed by a synchronous pathological process in the bladder. While in the pertaining instances the bladder involvement is usually the consequence of the prostatic disease, the cystitic phenomena may be very much in evidence and the changes in the prostate are not discerned. Thus,



it happens that we speak of the frequent occurrence of cystitis in the diabetic and entirely forget that in the male patient there may be an enlarged gland which stands at the foundation of the bladder complication.

The fourth eventuality of the connection of prostatic disease and diabetes—their origin from a common cause or the origin of prostatism from the diabetic state—is beyond question the most interesting. The prostatic state of this association has arisen on a purely systemic basis. In this, and in every other respect, it does not materially differ from the true status prostatidis of the aged. The main points at variance are that the prostatic hypertrophy occurring on the foundation of a constitutional disease or anomaly may be fully developed at a comparatively early period of life, and that the prostatic state resulting therefrom is usually associated with hypertrophic changes involving the greater part of the prostate gland.—(*Archives of Diagnosis*, Jan., 1914.)

#### Isotonic Solutions in the Local Treatment of Gonorrhea.

Saint-Martin and Uteau, in the *Presse Médicale* for August 23, 1913, write that intraurethral injection of isotonic medicinal fluids, that is, fluids prepared by dissolving antiseptic agent to be used in 0.75 per cent. saline solution, is better borne and generally occasions much less pain than where water alone is employed. Potassium permanganate, mercury oxycyanide and the organic and colloidal silver preparations should all preferably be used in isotonic solution. No chemical change results from their dissolution with the sodium chloride, except in the case of the mercury salt, which, especially when the mixed solution is boiled, may set free minute amounts of mercury oxychloride, mercury bichloride and sodium cyanide. In a large number of urethral and vesical irrigations or instillations made with isotonic solutions by the authors, better therapeutic results seemingly were obtained than with the ordinary procedure. Especially in early acute urethritis there was a marked difference, large irrigations with permanganate and colloidal silver causing no discomfort and proving more promptly curative. Instillations of silver albuminate, even one in forty strength, were found quite painless when normal saline solution was used as solvent.—(*N. Y. Med. Jour.*)

#### Ascending Infection of the Kidneys.

J. E. Sweet and L. F. Stewart, after giving a wealth of anatomical, pathological, and experimental evidence conclude:

1. That an extensive network of lymph-vessels and channels exist in the mucosa and submucosa, in the external coats of the bladder and the ureters, and in the entire structure of the kidney. This network in the ureter anastomoses freely with the lymphatics of the bladder at the one end, and with the lymph apparatus of the kidney at the other end.

2. That an ascending infection travels through this lymphatic system, not through the blood-vessels of the ureter nor through the lumen of the ureter. (a) The blood-vessels can be excluded, because the veins of the bladder and the veins of the ureter, for the greater part, open into the general venous system, not into the venous system of the kidney. (b) The lumen of the ureter can be excluded, because if the lumen be open to infection, the infectious process is traceable in the lymphatic system, not along the mucosa of the ureter. If

the lumen be closed to infection, the process extends to the kidney in the usual way; if the lumen be open to infection, but the lymphatics not in contact with virulent infection, as when the ureter is passed through the pancreatic duct, there is no ascending infection; if the lumen be open, but the continuity of the lymphatics be interrupted, infection does not ascend; and finally, if the kidney pelvis be directly connected with the gut, the general infection, characteristic of an ascending infection of the kidney, does not occur.

From the point of view of the practical surgeon, it would seem that these results would be of service in the consideration of the possibilities of any infectious process involving the lower genito-urinary tract or the pelvic organs in general; certainly the cystoscopist must transfer his attention from the general question of cystitis to the particular one of the local lesions caused by the cystitis, their extent and location. The possibility of the effective local treatment of ulcerated processes of the bladder is also suggestive.

The results of this work upon the general question of the anastomosis of the ureters with the bowel would not seem to hold out much promise. In their hands, at least, every attempt thus far has been blocked by the ease and rapidity with which the infection enters the lymphatic system of the ureter.—(*Surg., Gyn. and Obst.* No. 4, 1914.)

#### Diagnosis of Vesical Calculi.

Edwin Beer, New York, says that during the past two years he has so frequently observed the failure of the X-ray to detect bladder stones that he thought it advisable to put on record his results. The X-ray work was of the highest type, but his experiments show that even plates carefully made miss stones with considerable frequency. In twenty-two cases the radiograph showed the stones only six times. In nine of the sixteen negative cases, the chemical composition of the stones was examined and in all the calculi were uric acid or uratic. Nine of the sixteen negative cases had also prostatic adenoma. It would appear from this that cystoscopy is a much more reliable diagnostic aid in vesical calculi cases than the X-ray. How frequently the stones escape the radiograph examination in the upper urinary tract, Beer does not venture to say. Perhaps with improvement in technic and newer methods, which will coat the calculi with a layer of salts that does not allow the rays to traverse the modified calculus with equal ease, it may become possible to demonstrate all of these uric acid and uratic calculi both in the upper and in the lower urinary tracts.—(*J. A. M. A.*, Oct. 11.)

#### Rectal Fissure.

Recent fissure complicating hemorrhoids may at times be cured without operation. The fissure can be touched with a silver-nitrate solution varying in strength from 10 to 30 grains to the ounce of water every two or three days; on the alternate days a 5 per cent. cocain solution can be carefully applied (a few drops only); or the following ointment can be alternated with the silver application, or substituted for a time:

R	Hydrargyri chloridi mitis.....	gr. xv
	Opil pulvisis,	
	Extracti belladonnæ foliorum.....	āā gr. v
	Petrolati .....	3ss
Fiat unguentum.— <i>Med. Fortnightly.</i>		

# The American Association of Clinical Research

JAMES KRAUSS, M. D., Permanent Secretary and Editor.

## CLINICAL OBSERVATIONS OF SOME CARDIO-VASCULAR STIMULANTS.

### SERIES III.\*

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With the advent of the sphygmomanometer and the polygraph the clinical study of cardio-vascular stimulants received a new impetus. Original reports on various heart stimulants tested clinically with these improved facilities of observation are now seen in medical literature almost every week. This has led to a more rational employment, with more definite indications and contra-indications, of those remedies belonging to the digitalis group. Much less satisfactory has been the clinical demonstration of the action of that larger and heterogeneous class of heart stimulants not having the affinity for the vagus nerve and the heart muscle typical of the digitalis series. Attempted demonstrations of their effects in therapeutic doses have most often been disappointing, partly because the usual dose has been too small, and partly because these drugs offer greater difficulties to pharmacodynamic research. An idea of the intricacy of the study of such drug action may be had from the experimental work of Drs. George B. Wallace and H. G. Pamment (*Arch. Int. Med.*, April, 1914), who found that strychnin hastened the return to normal of blood-pressure lowered by chloral, but not after it was reduced by nitrites, hemorrhage, diphtheria toxin, chloroform, or shock. The inference is that only one type of low blood-pressure is favorably affected by strychnin; viz., such moderate depression of the vasomotor center as chloral may induce.

That the study of cardio-vascular stimulants so scrupulously pursued in the laboratory, should receive equal attention at the bedside, where actual pathological changes are met with, no one will doubt. But the immense amount of clinical experience required to determine the limitations of the range of action of a cardio-vascular stimulant can hardly be appreciated by one who has not dealt especially with this subject. Such an experience must be accumulated from various sources, not only to meet the demand for an almost limitless variety of cases, but also that the personal equation of the observers may be entirely obliterated. It is with a desire to furnish my quota of the needed "brick and mortar" that my present as well as my previous contributions on heart stimulants is presented. For lack of time and better facilities my work has been rather desultory, but it is to be hoped that by continued effort and frequent future installments to our association ultimately a more systematic summary of cases may be attained.

The cases here presented are numbered as a sequence to those of my previous reports.

**Case XVII. Pulmonary Tuberculosis.—Pituitary Extract. Adrenalin.**—Mr. B., aged 44, American. Occupation, merchant tailor. Height, 5 feet 9½ inches. Present illness dates from a case of pleurisy four years previously, which left him with a chronic cough, attended by a stringy, yellow expectoration. Physical examination, October, 1911, showed a slight involvement of apex of left lung and a tuberculous laryngitis. Tubercle bacilli were found in the sputum. After varying degrees of dysphagia, hoarseness and cough, with almost continu-

ous loss of weight, the patient was compelled to take his bed in May, 1912, at which time the upper lobes of both lungs were extensively consolidated and showed symptoms of breaking down. The heart was found normal. From this time the extension of the infiltration progressed more rapidly on the right than on the left side; the fever was moderate, attended by night sweats; urine contained great excess of indican, and the bowels became loose. Ulceration of the epiglottis became so extensive and the pain on swallowing so severe that feeding by means of a catheter introduced through the nose was deemed necessary. Nowwithstanding frequent and liberal feeding in this way, emaciation grew extreme, with corresponding debility. A few days before the stimulants were given the temperature registered 96-101.4, respiration 36, and pulse 124-135, and the stools numbered ten to twelve a day.

September 11, 1912, consolidation of right lung extended to fourth rib in front, and somewhat less on the left side. Moist râles were but few, mostly on left side, and the expectoration moderate. The condition of the heart was not examined at this time, but beyond a weakening muscular power, with probably some dilatation, no cardiac changes had previously been observed.

Before the use of the stimulant (pituitary extract) the following observations were made, blood pressure being taken by palpation of the radial artery:

Hours.	Systolic Tension.	Pulse.	Respiration.	Temperature.
3.17 p. m.	126	..	..	..
3.20	..	..	31	..
3.22	126	..	..	..
3.25	85	..	..	97.8
3.27	126	36	..	..
3.29	82	..	..	..
3.31	126	..	..	..
3.32	82	..	..	..
3.42	..	..	..	Defecation
3.47	84	..	..	..
3.48	130	37	..	..
3.51	1 c.c. pituitary extract (1 to 100) given hypoderm.			
3.54	132	..	..	..
3.55	82	36	..	..
3.57	128	..	..	..
3.58	87	..	..	..
4.00	122	..	..	..
4.01	117	..	..	..
4.02	87	..	..	..
4.04	127	..	..	..
4.05	129	..	..	..
4.06	85	..	..	..
4.07	..	42	..	..
4.10	130	..	..	..
4.11	136	..	..	..
4.13	86	..	..	..
4.14	..	39	..	..
4.15	140	..	..	..
4.16	87	..	..	..
4.17	144	..	..	..
4.19	142	..	..	..
4.20	85	..	..	..
4.21	..	42	..	..
4.24	84	..	..	..
4.25	145	..	..	..
4.26	85	..	..	..
4.27	..	42	..	..
4.32	87	..	..	..
4.35	144	..	100	..
4.37	86	..	..	..
4.38	146	..	..	..
4.39	..	42	..	..
4.42	148	..	..	..
4.43	86	..	..	..
4.46	150	..	..	..
4.50	150	..	..	..
4.51	85	..	..	..

Two days later, September 13, the use of adrenalin was decided upon, principally to ascertain its effect upon the greatly lowered blood pressure. The following notes were taken:

Hours.	Systolic Tension.	Pulse.	Respiration.	Temperature.
9.12 a. m.	114	..	..	..
9.16	..	30	..	..

\*Presented to the Sixth Annual Meeting of the American Association of Clinical Research, Baltimore, Md., Nov. 6th, 1914.

9.18	..	113	..	94.7
9.19	81	..	..	..
9.26	80	..	..	..
9.27	..	110	..	..
9.31	80	..	..	..
9.32	..	110	..	..
9.40	1 c.c. adrenalin (1 to 1,000) hypoderm.			
9.42	..	110	..	..
9.43	81	..	30	..
9.44	85	..	..	..
9.45	..	110	..	..
9.46	85	..	..	..
9.47	..	..	31	..
9.48	..	112	..	..
9.49	90	..	..	..
9.50	..	113	..	..
9.51	90	..	..	..
9.53	..	..	33	..
9.54	91	..	..	..
9.55	..	115	..	..
9.56	92	..	..	..
9.58	95	..	..	..
9.59	..	115	..	..
10.00	94	..	..	..
10.01	..	117	..	..
10.03	..	..	27	..
10.04	..	118	..	..
10.06	94	..	..	..
10.08	..	..	29	..
10.09	..	119	..	..
10.10	94	..	..	95.4
10.13	90	..	..	..
10.15	..	119	..	..
10.16	90	..	..	..
10.19	..	..	35	..
10.20	90	..	..	..
10.22	..	120	..	..
10.25	90	..	..	..
10.26	..	120	..	..
10.27	..	..	35	..
10.30	88	..	..	..
10.31	..	121	..	..

Upon the general condition of the patient there was no perceptible influence by either remedy.

Patient died at 8.45 p. m., apparently from strangulation at the time of feeding, the catheter probably having entered the larynx.

A slight irregularity will be noticed in the blood pressure throughout the observations following the injection of the pituitary extract. The average pressure proved higher after the administration of the drug than before its use, but inasmuch as the rise was an irregular one, and bore no relation to the pulse rate, we must conclude that it was due to extraneous causes (frequent constrictions of the arm; nervous influences) or to technical errors. The pulse showed a gradual increase from 130 to 150, but as there was manifested a corresponding increase in temperature—from 97.8 to 100—and respiration—from 36 to 42—it seems probable that the increased pulse rate was caused by the elevation of temperature.

In decided contrast is the behavior of blood pressure in the same case after the hypodermatic injection of adrenalin. Here a rise of 5 mm. will be noted in four minutes, increasing gradually until an increment of 15 mm. is reached in eighteen minutes, the point of culmination, after which a gradual decline will be observed. This is in full accord with case xvi previously reported, where two tests showed the beginning of a rise of blood pressure in four and six minutes and the maximum elevation in fourteen and twenty minutes, respectively. An increase in pulse rate is noted after the adrenalin injection, but, as in the instance of pituitary extract, it may largely have been coincidental. No polygraphic tracings were made, and if any extrasystoles occurred, they were obscured by the rapidity of the pulse.

**Case XVIII. Epilepsy.—Adrenalin.**—Mr. W. H. W., aged 19, American. Height 5 feet, 9 inch.; weight 153 lbs. Was

subject to convulsions until five years of age. From this time until fifteen he enjoyed good health and was free from spasms. Never had any other serious illness. Since fifteen years of age patient has been affected with epileptic attacks at irregular intervals. These attacks were usually preceded by some symptoms of digestive disturbance, as coated tongue or bad breath. Usually they occurred between 12 and 2 a. m., after sound sleep. When the seizures occurred during the day, a tickling in the head, blurred vision and a confused speech growing worse until unconsciousness set in, constituted the premonitory symptoms. Seldom was there an outcry. Convulsions involved the whole body; there was frothing at the mouth, and usually biting of the tongue. This was followed by a heavy sleep and, the next day, a headache.

Physical examination, April 10, 1912, revealed a normal heart. Kidneys, spleen and stomach were found in their normal positions. Spinal column normal; some tender points over intervertebral foramina to the right of dorsal spine. Vision of left eye, 20/15; of right, 20/20. The blood was found to contain 92% of the normal amount of hemoglobin; 8,700 white cells, with a differential count of: small lymphocytes, 19%; large lymphocytes and transitional, 5%; polymorphonucleated leucocytes, 75%; eosinophiles, 1%. Analysis of urine: sp. gr., 1.019; acidity (in terms of HCl), 0.1%; albumen, sugar and indican absent; ratio of total solids to urea, 3 to 1; of chlorides to urea, 1.1 to 1; of phos. acid to urea, 1 to 10; of uric acid to urea, 1 to 28½; of ammonia to urea, 1 to 20.

On the same day the following test with adrenalin was made:

Hours.	Systolic Tension.	Pulse.
4.19 p. m.	120	70
4.27	110	70
4.28	1 c.c. adrenalin chloride (1 to 1,000), administered hypoderm.	
4.29	..	70
4.30	115	..
4.31	..	82
4.32	128	..
4.33	..	100
4.34	140	..
4.35	..	90, somewhat irregular
4.36	155	..
4.37	..	98
4.38	160	..
4.39	..	92, still irregular
4.40	160	..
4.41	..	100, regular
4.42	..	101
4.43	158	..
4.44	..	103
4.45	143	..
4.46	..	104
4.48	149	..
4.49	..	100
4.50	150	..
4.51	..	99, regular
4.52	145	98, regular
4.53	145	..
4.54	..	100, regular

Since no polygraphic tracings were taken, the nature of the irregularity of the pulse was not ascertained. During the rise of the blood pressure and pulse rate the patient complained of tremulousness and nervousness. At the time of the acme a slight blanching of the face was apparent.

The action of adrenalin in this case was prompt and decided. The rise of blood pressure is noticed as early as two minutes after the injection and rapidly reaches its climax of 50 mm. in ten minutes. Five minutes later retrogression is observed, covering a period of over half an hour. The pulse rate also is greatly augmented, assuming an irregular rhythm during the rise of blood pressure, and this increased rate manifests a greater tendency to persist. This was likewise observed in previous experiments. No doubt, the depressing action upon the heart by high blood pressure tended to delay the development of a faster pulse rate, which attained its maximum after the blood pressure began to fall. Unfortunately, the diastolic pressure was not recorded, and a calculation of the total output of the heart before and after the action of adrenalin is, therefore, not possible.

Subsequently the patient was treated by his regular



physician, who had referred the case to me for examination, with eight drops of adrenalin, t. i. d., by mouth, which was said to have raised his systolic pressure at times as high as 137 mm., and, curiously enough, his epileptic attacks almost entirely disappeared, the patient improving in general health.

**Case VI. Complete Heart Block.—Nitroglycerin. Amyl Nitrite.**—Experiments with this patient were reported in my papers of 1910 and 1911. Until present writing his physical condition has undergone but little change. His dyspnoea has improved, enabling him to do very light work.

Sept. 9, 1912, he was suddenly seized with intense stitching pains in upper abdomen, each ventricular systole starting a thrill of pain so severe as to cause a sudden spasm of respiratory muscles. The pulse and respiration were consequently equal—24. Rising in bed greatly aggravated his suffering, which was attended by cold sweat and nausea. No tenderness, suggestive rigidity, enlargement or abnormal pulsation could be detected in the abdomen, nor any tender areas over the spine or muscles of back. The attack was first considered myocardial in origin, but as several similar attacks occurred at irregular times afterwards, and were always attended by more or less bloody urine, it became apparent that the patient was suffering from renal colic. Toward the end of this attack, Sept. 14, it was decided to give nitroglycerin and watch its effect. A few doses of nitroglycerin had been given by mouth the day before. Examination of the heart revealed the apex beat in the nipple line,  $3\frac{3}{4}$  inch from midsternum. Relative dullness extended  $3\frac{3}{4}$  to the left, and  $1\frac{1}{2}$  inch to the right of midsternum. A harsh systolic murmur was heard over the apex, and another, of higher pitch, in the aortic area and over manubrium sterni. Second pulmonary sound was distinctly accentuated. The following observations were recorded:

Hours.	Systolic Tension.	Pulse.	Respiration.
3.30 p.m.	165	24	
3.33.....	..	24	
3.34.....	165	..	
3.36.....	167	..	17
3.41.....	166	..	
3.49.....	167	..	
4.00.....	170	..	
4.05 1/50 gr. nitroglycerin given hypoderm.			
4.08.....	170	..	
4.12.....	170	..	
4.15.....	..	23	
4.16.....	..	23½	Restless
4.17.....	175	..	
4.34.....	195	..	Suffering pains
4.36 1/50 gr. nitroglycerin by mouth			
4.45.....	160	..	
4.54.....	180	24½	Pains in back and left side
5.03.....	..	25	25

The failure of the first dose of nitroglycerin to reduce blood pressure—the first instance in my series of experiments—was probably due to increased toleration acquired through the doses administered the day before. The auriculo-ventricular rhythm, which was 24 to 10, remained unchanged. The second dose, given before the first could have been entirely eliminated, evidently effected a slight, transient reduction in systolic pressure. The marked elevations of blood pressure coincided with paroxysms of pain, and were apparently dependent upon them.

Later on, July 22, 1912, the patient being in usual health, a test with amyl nitrite was made. The polygraph was run continuously for several minutes before giving the amyl nitrite by inhalation, and also for some minutes during its administration. The tracings were later compared, with this result: Pulse rate before the use of the nitrite, 21.74; during its employment, 22.22. Auriculo-ventricular rhythm before, 3.2 to 1; after, 3.5 to 1.

The effect of the nitrite is seen therefore to have very slightly increased the ventricular systoles, while the auricular contractions were stimulated to a somewhat greater degree—from 69.5 to 77.8 beats per minute.

**Case XIX. Fibroid Phthisis.—Camphor. Strychnia.**—Thos. P., aged 43. American. Formerly was employed in a tobacco factory. Height 5 ft. 7 inch. Weight 100 lbs.

Patient dates his illness from an attack of "la grippe" eight years previously, which left him with a protracted winter cough.

Coming under my care in May, 1907, he complained of a distressing cough, attended by scant or no expectoration, a mild fever, rapid heart action, and shortness of breath. The lower lobe of the left lung, except its apex, showed marked dullness on percussion, with breath sounds abolished and vocal fremitus and resonance almost absent. A hypodermic needle inserted into 6th interspace in anterior axillary line failed to admit any fluid into the syringe, and chronic pneumonia, with thickened pleural adhesions, was diagnosed. A few tubercle bacilli were detected in the sputum. While the respiratory movements were most conspicuous in lower right side of the chest, and the left ribs were somewhat retracted, there was no lateral spinal curvature. The heart sounds were feeble, the second sound manifested a reduplication, and second pulmonary was accentuated. No murmur was detected at this time.

At the time of the test, February 26, 1912, the fibrosis was considerably advanced. While no further progress was noticed in lower left lobe, the right upper lobe was found almost out of function, and the upper lobe of the left lung also gave signs of marked involvement. Over the heart negative pulsations were observed in the 4th and 5th intercostal spaces, while in the left 3rd intercostal space, near the border of the sternum, a systolic pulsation was manifested. A loud systolic pulmonary murmur, with a decidedly accentuated second sound, could be heard over the pulsating area in 3rd left interspace. Apex beat of heart was feebly visible and palpable 3 inch. to left of midsternum in 5th intercostal space. The pulse was 89, feeble and slightly irregular; respiration 24. Cough not distressing. The patient had had a fainting spell in the morning, with dyspnoea, cold hands and feet, cyanosis and nausea.

Testing the effect of a small dose of camphor, the following observations were made:

Hours.	Systolic Tension.	Pulse.	Respiration.
8.28 p.m.	98	..	..
8.31.....	..	89	..
8.35.....	97	..	..
8.36.....	..	90	..
9.05.....	90	..	..
9.06.....	..	85	..
9.11.....	92	..	..
9.12.....	..	84	..
9.14.....	90	..	..
9.15 2 grs. camphor, in olive oil, injected hypoderm.			
9.17.....	..	84	..
9.19.....	95	..	..
9.21.....	..	85	..
9.23.....	96	..	..
9.24.....	..	87	..
9.26.....	95	..	..
9.30.....	92	..	..
9.32.....	..	85	..
9.33.....	95	..	..
9.36.....	..	..	26
9.38.....	..	83	..
9.40.....	91	..	..
9.41.....	..	82	..
9.47.....	91	..	..
9.49.....	..	81	..
9.50.....	89	..	..
9.53.....	..	81	..
9.55.....	..	..	28
9.56.....	90	..	..
10.00.....	..	81	..
10.02.....	90	..	..
10.06.....	..	81	..
10.08.....	90	..	..

Polygraphic tracings taken before the exhibition of camphor showed an a-c interval of a trifle less than one-fifth second in length, a negative apex impulse, and in third left intercostal space a systolic pulsation which in all probability was due to a dilated pulmonary artery. Tracings taken after the camphor injection failed to show a perceptible alteration of those previously obtained.

Some months later, on July 11, 1912, at which time the patient's condition was practically the same, save a slight irregularity of the pulse, a test with strychnia sulph. was resorted to, as seen below:

Hours.	Systolic Tension.	Pulse.
12.27 p.m.	..	78
12.30.....	93	..
12.32.....	93	78
12.39 1/60 gr. strychnin sulphate admin. hypoderm.		

12.40	95	76
12.43	94	75
12.44	90	75
12.45	90	75
12.47	89	75
12.48	90	75
12.51	90	75
12.52	90	75
12.54	90	75
12.58	90	76
1.04	90	75
1.06	89	75
1.10	88	75
1.13	88	75
1.17	88	75
1.18	88	75
1.19	88	75
1.20	88	75
1.23	88	75
1.25	88	75
1.26	88	75
1.27	88	75
1.29	88	75
1.30	88	75
1.31	88	75
1.34	88	75
1.36	88	75
1.37	88	75
1.42	88	75
1.43	88	75

Tracings showed 22 ventricular extrasystoles to 500 pulse beats before the use of strychnin, and 21 extrasystoles to 700 beats after its employment. But as the extrasystoles were distributed very irregularly during both periods, the largest relative number (10 to 100 beats), occurring about half an hour after the hypodermatic injection, just at the time when the effect of strychnin is supposed to be most pronounced, the reduction of the extrasystoles must have been due to other influences. In no other way did the tracings appear to be modified by the drug. The patient's pulse became regular a month later, but the irregularity returned at different times until June, 1913, since which time the pulse has remained regular, though rapid and feeble.

A glance over the records of the camphor experiment reveals a slight increase in blood pressure and pulse a few minutes after the administration of the drug, but the fact that even higher blood pressure and pulse rate were observed before the injection renders a relation of this increase to the action of camphor doubtful.

Nor are we warranted in ascribing to strychnin the slight reduction in blood pressure and pulse rate, or alteration in rhythm, observed in the last experiment.

Since writing the above report the patient has died—October 18, 1914—and Dr. F. S. Graves, Professor of Pathology of University of Louisville, contributes the following post-mortem report:

Autopsy October 18, 1914.

Partial Autopsy 4 hrs. post mortem.

Body length 165 cm.

Body is that of a poorly developed, emaciated white male. Rigor mortis marked. Post mortem lividity present. No oedema. Pupils equal: 4 mm. in diameter. Four cm. at right of mid line and 4 cm. above costal margin is a small sinus; 2½ cm. to the right of this is a smaller, similar sinus, the edges of which are yellow, and yellowish pus exudes. Right costal margin prominent. The angle of Louis is prominent and opposite the third sternocostal joints.

PERITONEAL CAVITY. Diaphragm: Left, 6th rib; right, 5th rib. Fibrous adhesions over upper surface of left lobe of liver. In the cavity is about 250 c.c. of serous fluid.

PERICARDIAL CAVITY. Heart and lungs removed intact and saved for Dr. Askenstedt. Right auricle is dilated; measures 4x8 cm. in diameter. There are milk patches on the anterior surface of the right ventricle. The pleural cavities are entirely obliterated with extremely tough, fibrous adhesions, except in the lower portion of the left side, where there is a cavity 15 cm. long, extending from the diaphragm upward on the lateral and posterior surface. This cavity contains thin, yellowish, opaque fluid, in which are yellowish, flocculent deposits,

and is lined by a rough, yellowish gray membrane 2 mm. thick. The lung is contracted, but from its diaphragmatic surface there extends downward to the diaphragm a conical, tapering projection ending in a fibrous cord 3 mm. in diameter, which is attached to the left diaphragm. Anterior edge of cavity along longitudinal fissure. The heart and lungs are removed together with considerable difficulty, owing to the dense adhesions, and fixed in Kaiserling fluid. There is extensive fibrosis of the left lung and of the upper and middle lobes and the antero-superior portion of the lower lobe of the right lung. In the antero-inferior portion of the upper left lobe is an irregular cavity about the size of a large peanut, from which are divergent ramifications. Across this cavity and its branches stretch strings of fibrous tissue and vessels. There are scattered small caseous areas, smears from which show tubercle bacilli. The remainder of the lower right lung is dark red and oedematous. The fibrous deposit, especially over the upper portion of the lungs, is thick and dense. Tricuspid valve 10.5 cm., pulmonary valve 7.6 cm. at attachment of cusps, pulmonary artery 8.6 cm. 12 mm. above cusps. Otherwise the heart shows no gross lesion. Right ventricular wall 3 mm. thick. Left heart left intact on request.

SPLEEN. Rather small and firm, with some fibrous adhesion over its surface. On section the trabeculae are prominent and a small amount of pulp comes away on scraping. Markings are fairly distinct.

GASTRO-INTESTINAL TRACT. No gross lesion.

PANCREAS. No gross lesion.

LIVER. A few fibrous adhesions over upper, left surface. Organ firm and dark reddish brown. On section markings are distinct.

KIDNEYS. Organs are rather small. Capsule peels easily, leaving a dark red surface, in which a few, small, serous cysts are seen. Cortex 8 mm. thick. Markings distinct.

ADRENALS. Normal.

BLADDER. Normal.

GENITAL ORGANS. Not examined.

AORTA. Few, thin, yellowish patches seen in intima.

#### ANATOMICAL DIAGNOSIS.

Chronic pulmonary tuberculosis.

Fibrosis of lungs.

Chronic empyema, left.

Obliterative pleural adhesions.

Dilatation of right heart.

Tuberculous sinus.

Ascites.

Cysts of kidneys.

Aortitis, chronic.

Fibrous peritoneal adhesions over spleen and liver.

Case XX. Probable Senile Cardio-Sclerosis.—Camphor.

Atropin.—Frank K., aged 78, German. Occupation, gardener. Admitted to Louisville Public Hospital in August, 1914.

Denies any venereal disease. Has been drinking beer freely, but seldom indulged in distilled spirits; uses but little tobacco. Had the usual diseases of childhood, otherwise has been in good health until some weeks ago. Never used spectacles for reading. Complained of a sense of distension after eating and constipation. There were no regurgitations of food, no dyspnoea on moderate exercise, no dizziness, and no backache.

Physical examination revealed a well-nourished body, a rather full chest, with normal respiration. Except a lipoma, the size of a fist, upon the back of his neck, and an appearance of general anemia, no abnormality was disclosed by inspection. Heart: Apex beat was neither visible nor palpable. Relative dullness extended 3¼ inches to the left and 1 inch to the right of mesosternum. Absolute dullness 2 inches to the left. All heart sounds were feeble, except the second pulmonary, which was accentuated, and an occasional extrasystole could be heard. In the mitral area there was a faint, blowing systolic murmur, limited to this area. No increased dullness in first and second interspaces, no palpable pulsation in suprasternal fossa, and no murmur over manubrium was to be detected. The radial and temporal arteries showed no enlargement or hardening. Area of liver dullness was normal. Percussion and auscultation of chest proved negative. No abnormality was found in the abdomen.

After an Ehrlich test breakfast, and the removal of slightly greenish stomach contents, a partial gastric analysis gave the following findings: Quantity removed, 36 c.c. filtrate; quantity remaining in the stomach, 44 c.c.; total, 80 c.c. Total acidity, 39; free HCl 20.

Urine was faintly acid, sp. gr. 1023; contained no sugar, but a trace of albumen and an occasional cast.

During the week preceding the first test, the patient's temperature varied from 96 to 99, pulse 40-90, respiration 18-28.

Sept. 18, 1914, the following test was carried out, with the assistance of Dr. W. S. Carter, resident physician of the Hospital:

Hours	Systolic Tension.	Diastolic Tension.	Pulse.
3.43 p.m.	...	...	53, regular.
3.44	170	83	...
3.48	...	...	53, one extrasystole.
3.50	170	78	...
4.25	...	...	51, a few extrasystoles.
4.38	168	80	...
4.40	3 grs. camphor in 2 c.c. olive oil.	...	...
4.42	3 grs. camphor in 2 c.c. olive oil.	...	...
4.43	...	...	48, regular.
4.50	...	...	54, one extra systole.
4.52	175	80	...
4.53	...	...	51
5.00	...	80	...
5.03	173	78	...
5.04	...	...	51
5.09	183	78	...
5.10	...	...	47
5.15	...	...	47
5.18	...	78	...
5.20	173	77	...
5.23	173	78	...
5.25	...	...	48
5.29	183	80	...
5.30	...	...	47
5.34	188	80	...
5.39	184	78	...
5.40	...	...	54, one extrasystole.
5.43	183	78	...
5.45	...	...	47
5.47	182	80	...

On account of the bradycardia it was decided to watch the effect of atropin on the rate and rhythm of the heart, and on September 24th the observations seen below were made:

Hours	Systolic Tension.	Diastolic Tension.	Pulse.
3.22	164	85	...
3.23	...	...	54
3.29	158	80	...
3.32	164	75	...
3.45	158	77	...
3.46	...	...	52
3.47	1/100 gr. atropin sulph. hypoderm.	...	...
3.47	...	...	54
3.49	...	...	51
3.52	...	77	...
4.04	1/100 gr. atropin sulph. hypoderm.	...	...
4.06	...	...	57
4.09	184	85	...
4.11	...	...	53
4.18	...	...	62, chilly.
4.24	195	95	...
4.26	...	...	58, face red.
4.36	195	95	...
4.39	...	...	57
4.45	...	...	56
4.48	183	96	face paler.
4.50	...	...	53
4.55	185	90	...
4.57	...	...	55
5.00	183	90	...
5.01	...	...	54
5.13	170	85	...
5.15	...	...	54
5.20	170	85	...

Polygrams were taken before and after the use of atropin, and it was noticed that during the rise of blood pressure and pulse rate extrasystoles increased to almost twice their usual number, subsiding with the decline of the cardiac stimulation. No shortening of the a-c interval was observed in this case. It can hardly be doubted that the simultaneous rise of systolic and diastolic blood pressures and pulse rate was a result of the action of atropin. This rise, covering a period of about one hour, seems a small compensation clinically for the toxic effect of so large an amount of the drug as was administered.

In the camphor experiment, above recorded, polygrams showed no perceptible change, either in number of extrasystoles or in a-c interval. While the average systolic pressure was somewhat higher after the camphor injection than before, the readings are so irregu-

lar, due to the restlessness of the patient and the extrasystoles, that no conclusion can be safely drawn. The pulse rate, much reduced in the beginning, showed a tendency to further reduction, but there was nothing in its course suggesting an effect of the drug.

(Concluded in March number.)

## The Physician's Library

### Local and Regional Anesthesia, Including Analgesia.

By Carroll W. Allen, M.D., of Tulane University, New Orleans, with an introduction by Rudolph Matas, M.D. Cloth, 625 pages, with 255 illustrations. \$6.00 net; half morocco, \$7.50 net. Philadelphia and London: W. B. Saunders Company, 1914.

This book will give local anesthesia a decided impetus, for herein are set down all the ways and means on that subject that the surgeon might desire to know. It sets forth in detail the surgical work which has been performed in Charity Hospital, New Orleans, under local anesthesia. We have it on the word of that past-master, Matas himself, that "fully 55 or 60 per cent. of the major operations in the division under his (Allen) charge are performed solely by peripheral anesthetic procedures, exclusive of the spinal or sub-arachnoid analgesias which are not included in this category."

Such a statement speaks volumes for the value of local anesthesia. Matas remarks that cocain and its substitutes have been "successively displaced by what now appears to be the nearest approach to the ideal local anesthetic—novocain." This in combination with suprarenin "by practically eliminating the toxicity of the analgesic, increasing its stability, durability and intensity, have so expanded the technic that, in the hand of an expert, peripheral analgesia may be made to encompass in its grasp almost the entire domain of operative surgery."

In this book Allen has laid great stress on an intimate knowledge of anatomy, which is a prime essential in successful anesthesia. He amply discusses general, regional and topical anesthesia in every form, shows the necessary instrumentarium and illustrates every movement necessary to effect success.

The book will be received with real satisfaction on account of its exactness and general applicability to conditions as they exist.

**Diseases of the Nose and Throat.** By Jonathan Wright, M.D., Director of Laboratories, New York Post-Graduate Medical School, and Harmon Smith, M.D., Clinical Professor of Laryngology and Rhinology, Cornell University Medical School. Cloth, 683 pages, with 313 engravings and 14 plates. \$5.00 net. Philadelphia and New York: Lea & Febiger, 1914.

This is a good book on a subject which has been considered from every angle by many writers. The authors have pinned their faith on the etiology and pathology of rhinological and laryngological diseases and they have builded wisely; nothing is more essential, yet authors frequently treat them with scant courtesy.

Symptomatology, diagnosis and local and operative treatment follow in logical sequence and in no less comprehensive detail, and are not slighted in any degree.

Much of the work in etiology and pathology rests on original investigation in the laboratory and clinic extending over many years. While the extensive literature of this subject is evident, references are subordinated to original research and conclusion.



The subject matter is the rich meat of the nut; the style is pleasing and the many photographs add decidedly to the text. The specialist, general practitioner and student will find this book of great value in their respective spheres.

**Dietetics: or Food in Health and Disease.** By William Tibbles, M.D., L.R.C.P., Medical Officer of Health, Fellow of the Royal Institute of Public Health, etc. 627 pages. Cloth, \$4.00 net. Philadelphia and New York: Lea & Febiger, 1914.

The skillful blending of proper therapeutics, diet and nursing goes far toward restoring every patient to health and not the least important in this trilogy is diet. Therefore, this subject should be considered scientifically, and Tibbles' book enables one to grasp it intelligently. The study of the enzymes, lipoids, and salts, of the insufficiency of certain proteins, and of the vitamins is epoch-making, and has caused a corresponding advance in dietetics. These discoveries are so important as to raise the question whether nutritive failure or success does not depend as much on these "accessory bodies" as on the primary elements of the diet. These new thoughts and their applications have been given for the ready assimilation of those who have not made a special study of this subject. The careful consideration of this book will help in solving many a difficult clinical problem.

**Book of the Sick Room.** Paper; 80 pages; 25 cents. New York: Meinecke & Co., 66 Park Place, 1914.

This useful little book is intended for family use. It gives many practical points on the care of the bed, the patient and the sick room. Practical nursing hints and an explanation of necessities in the patient's room are added, while of not the least importance is a catalog of utensils and comfort-giving appliances.

The physician could do well to place these books in the hands of his clientele.

**Local Anesthesia: Its Scientific Basis and Practical Use.** By Professor Dr. Heinrich Braun, Obermedizinalrat and Director of the Kgl. Hospital at Zwickau, Germany. Translated and edited by Percy Shields, M.D., from the third revised German edition. Cloth; 399 pages, with 215 illustrations in black and colors; \$4.25 net. Philadelphia and New York: Lea & Febiger, 1914.

The work of the "father of local anesthesia" is given us by Shields in a clearly translated and comprehensive volume. To Braun the surgical world owes an unpayable debt, for it is his mastery of technic and inventive skill which has given us local anesthesia in its present state of perfection. With the aid of novocain and suprenin painstakingly injected into the proper points, Braun has performed a great variety of major operations with perfect ease and he scorns the use of a general anesthetic in ordinary cases.

The book presents to the reader the various methods of the technic with extraordinary clarity and the text is aided by many excellent illustrations. Braun has brought order out of chaos and has systematized the use of the local anesthetic, so that the surgeon can follow certain definite and exact rules of procedure. The work is the last word in local anesthesia and will go far toward popularizing this easy and comfortable form of anesthesia.

#### The Physician's Visiting List.

The 1915 visiting list issued by P. Blakiston's Son & Co., of Philadelphia, is, as usual, a *vade mecum*. Aside from the pages devoted to the keeping of ac-

counts, it contains various tables of weights, measures, signs, and doses, and one for the calculation of the period of utero-gestation; rules of pharmacologic and therapeutic incompatibility; a comparison of thermometers and other material of interest. The list has been published by the Blakiston's for sixty-four years, and it retains its full measure of popularity.

**Black's Medical Dictionary.** By John D. Comrie, M. A., M. D., of the University of Edinburgh. Cloth. 5th edition. 860 pages. Illustrated. \$2.50 net. New York and London: The Macmillan Company, 1914.

This carefully prepared work is a combination dictionary and encyclopedia and as such has a most useful purpose. It has kept away from the technicalities of medicine to a considerable extent and is therefore of value to those laymen who need a book of this kind which will give them a bird's-eye view of medical matters. It states facts clearly and succinctly and has a valuable cross reference, which will prove very helpful for the class of readers for which the book is intended.

**Manual of Obstetrics.** By Edward P. Davis, A. M., M. D., Professor of Obstetrics in the Jefferson Medical College, Philadelphia. Cloth, 463 pages, 171 illustrations. \$2.25 net. Philadelphia and London: W. B. Saunders Company, 1914.

A vast amount of obstetric knowledge is to be found in this book. It is, indeed, one of the best obstetrical manuals which has yet appeared. The wide experience of the author enables him to present many ideas that are not to be found in the larger text books.

It is the kind of a volume which the general practitioner wants at his elbow constantly. Many helpful illustrations add materially to the excellent text matter.

**The Germ Cell Cycle in Animals.** By R. W. Hegner, Ph. D., Assistant Professor of Zoology in the University of Michigan. Cloth, 346 pages, illustrated. \$1.75 net. New York: The Macmillan Company, 1914.

Those phenomena which have to do with the origin and history of the germ cells from one generation to the next are treated comprehensively in this book, which will prove a source of delight to the biologist. Hegner dwells especially upon the period of the segregation of the germ cells in the developing egg and the visible substances concerned in the process.

As valuable as the work is from a biological standpoint, its importance is enhanced by an excellent bibliography.

**Pathogenic Microorganisms.** (Including Bacteria and Protozoa.) By William H. Park, M. D., Professor of Bacteriology and Hygiene in New York University; and Anna W. Williams, M. D., Assistant Director of the Bureau of Laboratories, New York City. 5th edition. Cloth, 684 pages, with 210 illustrations and 9 full-page plates. \$4.00 net. Philadelphia and New York: Lea & Febiger, 1914.

The fifth edition of this book is naturally the most valuable of the series, because there has been a rearrangement of the matter of the fourth edition, much new material added and many chapters rewritten. Now Part I is given over to the methods of study of all the micro-organisms; part II includes the study of individual pathogenic micro-organisms and their near relatives, and part III is devoted to applied micro-biology. With the decided advance in knowledge of and interest

(Continued on Page 20.)

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(Continued from p. 70.)

in bacteriology, a book like this appeals to the practitioner quite as much as the student, while for the health officer it is a *sine qua non*.

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The volume will stand as a classic.

**Medical Jurisprudence.** By Elmer D. Brothers, LL. B., Lecturer in Medical Jurisprudence in the University of Illinois. Cloth. 300 pages. \$3.00 net. St. Louis: C. V. Mosby Company, 1914.

This is a resume of the lectures delivered by the author before his medical students and is a clear cut exposition of the subject as it affects medical men. He only discusses medicine in its relationship to the law and to the application of legal principles. It is a useful addition to the library.

**The Practitioners 1915 Visiting List.** Cloth. \$1.25. Philadelphia and London: Lea & Febiger, 1915. This list contains all the essentials which have made it so popular in the past. Besides the account section, the pages devoted to urinary examination, poisons, dosage and therapeutics are timely and useful.

#### The Gorgas Medal.

The Gorgas Medal, to be given yearly in honor of Surgeon-General W. C. Gorgas, U. S. A., has been established by the Medical Reserve Corps Association, of New York. This medal is open to competition to members of the Medical Corps of the United States Army, the Medical Reserve Corps of the United States Army, and to members of the Medical Corps of the organized militia. Officers may submit papers on any subject of a medico-military nature.

General Gorgas has appointed the following board of officers to act upon papers submitted:—Colonel Charles Richard, Lieut-Col. Champe C. McCulloch, Jr., and Major Eugene R. Whitmore, Medical Corps. These officers are members of the faculty of the Army Medical School, and will have sole authority to appoint the time that papers are to be submitted, and to pass upon the merits of the papers. All inquiries should be addressed to one of these officers.

#### Membranous Dysmenorrhea.

K. I. Sanes, Pittsburg, Pa., describes the physiology of the endometrium and of menstruation in quite full detail and argues from the findings that membranous dysmenorrhea does not depend on endometritis for its occurrence. The inflammatory appearance of the lining membrane of the uterus is physiologic, and if the picture of menstrual membrane could prove a endometritis, then all menstruating uteri have endometritis. He quotes from Van Herwerden (*The Physiology of Reproduction*) that in certain monkeys a membrane is always cast off during menstruation, and if it is considered physiologic there why should it be considered unphysiologic in the human species? Is it because it is rare in the human female? he asks. He says it is, however, a great deal commoner than is generally supposed. It is not always accompanied by pain and naturally such cases are not reckoned as membranous dysmenorrhea. Dysmenorrhea is common and there is no reason why it should not occur in cases where a membrane is cast off. He quotes a number of authorities to show that a

menstrual membrane is not inconsistent with fertility and offers a suggestion that the formation of the membrane may be due to a more excessive stimulation of the process by the ovarian hormones.—(*J. A. M. A.*)

#### Antityphoid Inoculation.

Facts as to the efficacy of antityphoid inoculation accumulate almost daily. At Jacksonville, during the Spanish War, there were about 2,673 cases of typhoid fever with 248 deaths. At San Antonio, when our army was concentrated on the Mexican border in 1911, there were two cases of enteric fever and no deaths, although 13,000 men were encamped. During an epidemic of typhoid fever at Avignon, France, the garrison consisted of 2,052 men, of whom 1,366 were inoculated. Among the unvaccinated soldiers 155 cases occurred, with 21 deaths. Among the vaccinated there was not a single case. All the soldiers lived under exactly the same conditions. Again, in Eastern Morocco, among 962 vaccinated soldiers there was no case of infection, whereas among the unvaccinated the morbidity was 38.22 and the mortality 5.51 per 1,000. In five years in the British army in India the rate fell from over 15 to under 5 per 1,000, and the death rate from over 3 to 0.63 per 1,000. During the year 1910 among about 70,000 men there was a total of 306 cases of enteric fever; 151 of these occurred among 10,000 who were unprotected and 155 in the 60,000 who had been vaccinated. Only 11.2 per cent. of the inoculated died and 16.1 per cent. of the uninoculated.—(*Medical Record*, Nov. 28, 1914.)

#### The Home Hospital Experiment in the Treatment of Poverty and Tuberculosis in New York.

The questions which the Association for Improving the Condition of the Poor set out to answer in this experiment were, first, whether it were possible to treat families, in which one or more members are infected with tuberculosis, by keeping each family together in its home, without imperilling the uninfected members; second, whether the results of such treatment would compare favorably with those secured by removing each patient from his home to a sanatorium or other special institution; and, third, whether, in cases where tuberculosis is combined with poverty, it costs more to treat the family as a unit or to break it up. The results of two years' actual trial of the experiment appear to answer the first question emphatically in the affirmative. Medically the results compare favorably with those obtained in the best sanatoria and hospitals, and the cost has proved less than that of any other adequate treatment of combined poverty and tuberculosis. The importance and value of this home hospital experiment appeals with peculiar force to both physicians and publicists, since it involves not only an efficient medical treatment of disease, but the sociologic and economic rehabilitation of families and individuals otherwise a double burden and menace to the community.—(*Boston Med. and Surg. Jour.*, Nov. 26, 1914.)

#### The Toxicity of Camphor.

D. J. Milton Miller, Atlantic City, reports a case in which a baby of 18 months was given a brimming teaspoonful of camphorated oil by mistake, containing from 14 to 15 grains of camphor, without causing any symptoms of note. He mentions it because more or less alarming symptoms are often produced by much smaller doses, though fatal poisonings are very few.—(*J. A. M. A.*, Aug. 15.)